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NYSC NOTES NUMBER 188 JANUARY 1973

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FOUNDED JAN. 1949

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These NOTES are distributed by mail to all members of the NEW YORK SHELL CLUB, Inc. Dues: Full membership $4.00 per year, $1.50 additional for each of other members of the same family -- with one copy of NOTES per family. Corresponding membership $2.50 per year. A limited number of back issues of the NOTES are available at $.30 postpaid per single copy; also bulk rates. Items and articles for publication in the NOTES should be sent to the Editor. The Corresponding Secretary should be notified promptly of any change in your address.

8577-21-3

The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, FEBRUARY 11, 1973, at 2:00 P.M.

PROGRAM: A CLOSER LOOK AT SOME FAVORITE SHELLS (color slides)
by Leonardo Hernandez

SHELLING IN BAJA CALIFORNIA (color slides & exhibits)
by Cecelia Von der Heyden

SHELL-OF-THE-MONTH

1973 FLORIDA SHELL SHOW DATES

January 26 - 28:	South Florida Shell Club. Museum of Science, 3280 South Miami Avenue, Miami.
February 9 - 11:	Broward County Shell Show. Swimming Hall of Fame, Fort Lauderdale.
February 16 - 18:	Sarasota Shell Show. Civic Center Auditorium, Sarasota.
February 18 - 20:	Naples Shell Show. Cove Inn Auditorium, Naples.
February 22 - 25:	St. Petersburg Shell Show. Treasure Island Auditorium, Treasure Island.
March 1 - 3:	Sanibel Shell Fair. Community House, Sanibel.

W. E. Old

Will all members who are planning a display for the Shell Show, please let me know as soon as is possible how large their display will be and what they plan to display. Deadline for entries is March 15th, but we need to know early in order to rent enough tables to hold the displays.

There will be three prize categories: --

1) Popular prize, decided by the Show's visitors
2) Exhibitors' prize, decided by the exhibitors
3) A junior prize

We also need the help of club members while the show is on, since at least two members must be present at all times when the exhibit is open. Please Volunteer!

The dates are: Sunday, April 22 - Saturday, April 28; 10:30 AM - 5 PM

Dorothy Germer

IN MEMORIAM

The members of the New York Shell Club were saddened to learn of the sudden passing away on December 14 of George E. Jacobs. He fell ill on December 11, and, in spite of intensive care, succumbed three days later.

Mr. Jacobs was a charter member of the Club and served as its vice-president in 1957 and 1958 and as its president in 1959 and 1960. He made the acquaintance of Mr. William H. Weeks, and when Mr. Weeks passed away, Mr. Jacobs undertook to sell the very rich and well-known Weeks Collection for the benefit of the surviving son. This led to Mr. Jacobs' activities as a shell dealer, a business which he conducted from his home in New York City. Here he also preserved his extensive and very beautiful private shell collection. Recently he moved from New York City to Spring Valley, New York. His shell collection was so large that it required about 500 boxes.

George was an active and conscientious club officer and as a member he frequently entertained and enlightened our meetings with interesting and informative talks. He will be much missed. He is survived by his wife Lina and his children Ellen and Henry.

ON THE CARE, FEEDING AND PRESERVATION OF NUDIBRANCHS

By Gale G. Sphon
Los Angeles County Museum of Natural History

The best advice that I can give is DON'T! The best way to it is to go to the beach and observe the animals in their natural habitat. Photograph them there if you can. The easiest way to do that is to take a real camera buff along with you and let him do all the work while you enjoy the scenery at the beach. If you must take nudibranchs home for your tank be sure that you notice what you think they are feeding on. Many of them are very specific about what they will eat. After you have collected what you believe to be the 'Branch's food, as well as the 'Branch' itself, and have put them in some type of plastic container to transport them, be sure that they are not crowded. Crowding is a very quick way to get off to a very bad start. You'll find that when overcrowded, all the oxygen gets used up rapidly and everything dies -- very fast; and smells -- badly! If you must keep them alive in a bucket for several days, try and keep them cool. Put some ice in a plastic bag and float it in the bucket. Leave the bucket uncovered when possible to allow more oxygen to be absorbed. Once you've gotten them home and in your tank you'll find out several things rather rapidly: you brought the wrong kind of food for them; the food you did bring was the right kind, but you didn't bring enough of it; the food died and the 'Branch' won't eat it; the 'Branch' is nocturnal and doesn't like the light; it spends all its time under the rock in the aquarium and

you never do get to see it. With all this information you can do several things: take the animal back to where you found it, put it back and forget about it; go back and get more food if what you did get *was* the right kind; see if you can find the right kind of food if you didn't get it the first time; or, *pickle* the 'Branch'! If you do decide to pickle the 'Branch', you've got more work ahead of you. If you didn't get photographs of the animal, at least make a color sketch of it *BEFORE* you preserve it. There's a little more to preserving a nudibranch than just dropping it into a bottle of alcohol. If you are lucky, you may be able to get the animal to relax by slowly adding epsom salts to the sea water. If this taxes your patience and you decide to go ahead and pickle the damn thing, use 85% ethyl alcohol. After it's been in for about six hours, drain off the alcohol and replace it with 80% ethyl alcohol. The reason for this is the animal is mostly water and the alcohol removes it -- thus diluting the alcohol. Do the same thing about a week later, replacing the alcohol with 80% ethyl. About that time you will probably notice another set of things that has happened: 1) The 'Branch' has shrunk considerably. 2) It has lost all its color. 3) It has turned into a nasty greybrown mess. Want some more advice? Throw it down the garbage disposal and forget it! Pour what you have left of unused ethyl alcohol in some orange juice and relax!

Now let's go back and look on the brighter side of things. Just suppose you got the creature home all right; you just happened to get the right food for it, and you have enough of it; you haven't crowded anything, and all is going well, you are pleased; and the animals have laid a rosette of eggs on the front of the tank! The eggs hatch and it turns out that you have found one of those rare species that have no veliger stage, but have direct development. You can rear the young and do a life history on the species. What's happened? You've become "hooked" on 'Branchs', that's what's happened.

Good Luck! You'll need it!

ARTICLE OF THE MONTH

In line with today's computerised living is an article in Oceanology *11*: 585, 1971 by Menshutkin and Golikov entitled "Modelling the Gastropod Mollusk Population on a Digital Computer." They have made a digital computer model of the population of the mollusk, *Epheria turrita* and find that the population is considered to be stationary in time. Determination of the production characters and their variations as a function of external factors have also been made.

Henry D. Russel

A SIMPLIFIED METHOD FOR DEALING WITH CHITONS

Collecting chitons can be one of the most frustrating of all shelling experiences because of the unfortunate curling-up which appears to be their means of defending themselves. We have recently tried an old and seemingly almost forgotten technique; that of narcotizing the animal to relax it and then killing it in the extended relaxed state. Rather than trying to deal with the chitons with splints and strings while collecting, the chitons are placed directly into the collecting pail with fresh sea water, which can be added to or changed to keep it cool and fresh. When the days collecting is ended, or even after you have returned home, sprinkle a small amount of Magnesium Sulphate (Epsom Salts) crystals over the top of the water in the collecting pail. Set the pail aside for about a full day, while the Epsom Salts do their job of relaxing the animals; the degree of relaxation can be determined by touching the animal with a sharp object, it is complete when the animal make no reflexive movement on being touched. The chiton can then be placed on a glass or wooden support and tied down. When tied, place the chitons in alcohol, which should be changed after 24 to 48 hours, and again every few days till the alcohol no longer changes color. The discoloration of the alcohol is greenish which I presume is due to the greenish coloring matter in the Algae which forms the principal food of chitons. We have tried this method with limpets, too. They were so loosened by this method that they could be shaken out of the shell as soon as the animal was completely relaxed. The proportion of Epsom Salts to sea-water is not critical, about half a teaspoon of the crystals per quart seems to work in about eight to twelve hours with small to medium species. We haven't tried to narcotize any large specimens to date, but hope to in the near future. This technique might work as well with coiled gastropods by relaxing the hold of the upper visceral mass on the inner whorls of the shell.

Frank & Lee Nelson

ON CONSERVATION AND SHELL CLUBS

(Excerpt from the Conservation Report, delivered at Key West, July 1976)

My one hope for this meeting is that we can awaken some sense of responsibility among the shell clubs to keep informed on any conservation moves that affect the molluscan environment in their area and to join with other conservation groups in supporting good conservation legislation. I'd also like to see the clubs learn how to take a good census of molluscan populations, (and I don't mean a collecting field trip), making annual or semi-annual notes on populations, so that over the years we can have a real record of molluscan key populations which will give us real clues on the general condition of the ecology.

Anne Speers, Chairman,
Conservation Committee, AMU

DETERGENTS HELP STARFISH CLEAN UP MOLLUSCS

An unexpected behavioral side effect of the use of detergents in mopping up oil spills is the suppression of the avoidance response that some molluscs exhibit when approached by starfishes. The stimulation for these escape responses has long been known to be chemical. Recent experiments have tested the effectiveness of chromatographically separated starfish extract on the common whelk, Buccinum undatum, and several steroid glycosides with surface-active properties have been found responsible for almost all the stimulating effect. It now appears that sub-lethal doses of commercial detergent destroy this sensitivity. A. M. Mackie of the NERC Fisheries Biochemical Research Unit at Edinburgh has found that exposure of the common whelk to detergent concentrations as low as 5 micro-grams per liter of water (under a hundred-millionth of an ounce per gallon) eliminates response to starfish glycosides for several days. This finding suggests that molluscs in "cleaned" coastal areas may be abnormally vulnerable to starfish attack, and, more generally, that detergent and other chemical pollutants can insidiously upset natural relationships in the coastal seas.

From: SEA SECRETS, Vol 14, No. 6, Nov.-Dec. 1970.

HELP PAPER MILLS COMBAT POLLUTION BY REDUCING WASTE SOLIDS UP TO 60%

A series of specialty chemical products used in making paper is effectively reducing water pollution at paper mills by as much as 60%, according to National Starch and Chemical Corporation.

The company said its conclusions are based on operating results and test data from paper mills in the United States, Great Britain and Germany. The beneficial effects of these chemicals at the "wet end" or beginning of the papermaking process have been known for several years. However, NSC said, recently developed compounds used in other stages of production are now proving increasingly effective through the whole system.

NSC termed its findings a noteworthy step in meeting environmental objectives while filling the primary purpose of improving the efficiency, economics and quality in the manufacture of a wide range of paper products.

Waste is reduced because the special starches and chemicals used inter-react with the wood fibers and other furnish additives to retain them in the paper rather than have them carried away with the huge quantities of water necessary in the papermaking process.

As quantities of starches, pigments and fine fibers are washed away in the water used, they produce several negative conditions for paper makers:

- valuable materials are lost,
- water used in the manufacturing cycle becomes laden with materials which interfere with other water-employing apparatus, and ultimately and most severely,
- contribute to the pollution of rivers and streams which carry away the mill effluent.

BATHERS' ITCH

QUESTION.-- During the past two winters I have done some diving in the Bahamas. During both trips, after 6 hours of snorkling off the beach, I broke out with something that would resemble mosquito bites on arms and legs. There was severe itching and a general feeling of slight illness for about 5 days after breaking out. I treated it with witch hazel. I have been diving for 15 years, all over, and have never gotten anything like this. I assume it is due to some sort of marine life -- small jellyfish or something. I am sure I did not touch fire coral or come in contact with anything noticeable. Do you have any idea as to what they could have been? If so, would a wetsuit keep them out? Can you suggest any treatment?

ANSWER.-- Some years ago, studies of what was then called "sea bathers' itch" was shown to be caused by trematode parasites, the adults of which normally attack marine birds. The larval stages attach to the unprotected skin of a swimmer and burrow indiscriminately, causing irritation and inflammatory response. Since the biochemistry of the human body is not compatible with their continued development, these irritations are normally short-lived. An indication of the difficulty these organisms experience in penetrating human skin is provided by the distribution of the areas of the rash. They are generally found under the belts, swimming shorts or on other parts of the body that remain wet with sea water for longer periods than uncovered skin. A wetsuit might thus help in the invasion. A prompt shower with fresh water would probably destroy the larvae osmotically before they could penetrate with skin. The attack does not persist for more than a few days, and no permanent disability results.

from SEA SECRETS, Vol 14, No. 6, Nov.-Dec. 1970.

EDITOR'S NOTE: No one need go to the Bahamas to be afflicted with these minor but annoying symptoms. Recently the New York Times informed us that this itch, here called "Clam Digger's Itch", is quite common in Long Island Sound and other bays in the New York area.

Here the vector of the parasite is the Mud Basket Snail, Nassarius obsoletus (or Ilyanassa obsoleta Say) (See Jacobson & Emerson, Shells from Cape Cod to Cape May, 1971, p.58), probably the most abundant snail in the New York City area. And, as the Times puts it, where there are sea birds and snails, there you will find the Clam Digger's Itch. The itch is called medically Schistosome dermatitis, which looks enough like Schistosomaisis, the horrid snail fever afflicting so much of the world's population in tropical and subtropical areas, to scare anybody. Fortunately, as above reported and as affirmed by the Times, the itch is not serious -- no worse than mosquito bites, for example -- and easily prevented. The Times' suggestion is even easier to follow than the one given by Sea Secrets: "If you are exposed to Schistosome dermatitis, it is recommended that you dry yourself with a rough towel as soon as you emerge from the water, because the larvae usually do not penetrate the skin until the water is evaporating." Or douse yourself with rubbing alcohol. (the Editor's recommendation.)

We welcome new member, Eileen Corring, of 19 Irving Avenue, Englewood, New Jersey 07632, whose name reached us too late to be on the accompanying roster supplement.

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ROOM 329, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, MARCH 11, 1973, at 2:00 P.M.

PROGRAM: ECOLOGY OF LAND SNAILS COLLECTED IN THE MOUNTAINS SOUTH OF MARSEILLES, FRANCE.

by Florentin Maurrasse

SHELL PAINTINGS

by Richard Ellis

SHELL-OF-THE-MONTH by George Raeihle

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The April 8th meeting is a social one, with shells, slides, and supper offered. Save your duplicate shells and related material for the occasion. Further details in the next notes.

We were shocked recently to hear of the sudden death of Mrs. Louise Clarke, the wife of Dr. Arthur K. Clarke of the National Museum of Canada. Members who attended the A.M.U. conventions will recall her kind and gracious presence. We send our deepest condolences to Dr. Clarke and his son Arthur.

Dr. Harold Susman (CL 8-2478) would appreciate the possessor of his grey hat calling to arrange an exchange. Yours doesn't fit.

"The Sea that loads our table, and conveys
The wanderer man from clime to clime ...
Each moss, each shell, each crawling insect holds a rank
Important in the plan of Him who framed
This scale of beings; holds a rank, which lost
Would break the chain, and leave behind a gap
Which Nature's self would rue ..."

Benjamin Stillingfleet, (fl. 1800)

COLLECTING DOWN UNDER

Horst Bernhart
Newport Beach, N.S.W., Australia

The following article may not have that professional flavor but it will present a picture of my observations and experiences since I arrived in Australia six months ago. My original interests and curiosities were widened by Frank Nelson, with whom I correspond quite frequently.

The area in which I spent most of my time shelling is north and south of Sydney, and it consists of 20 or 30 beaches. Each beach will have, varying in height from 100 to 200 feet, high rugged highlands sloping down to the sea. This is prevalent on both the extreme north and south end of the beach. One usually finds at the base some kind of rock platform or a broken rocky shore, in and among which, in rock pools, cracks, crevices, and broken boulders live molluscs. Since there are so many beaches to go shelling to, I have started a note book. Each beach is listed by name, distance north or south of Sydney and a rough sketch showing the location of these rock pools. Then briefly I describe the beach and what species are in abundance. So far I have found two locations where the species are well defined due to their natural protection from the rough surf and the casual visitor. Some of the areas are narrow due to the fairly steep rise of the rock formation, while others have broad horizontal areas with hundreds of square feet. Some species are more abundant in that particular area than in others.

The sandy beaches reveal very few live specimens or species, if any. In these areas I usually find the cuttlefish bone of *Solitosepia liliana*, the Ramshorn Shell, *Spirula spirula*, the Banded Kelp Shell, *Bankivia fasciata* which shows a great variety of colours and patterns. The most fascinating species in this area is the Violet Snail, *Janthina janthina*. Bivalves with both valves are scarce in these areas. So far I have only come across the Pipi, *Pledidonas deltoides* on a trip to Seal Rocks about 190 miles noth of Sydney.

Now turning to the rocky platforms; here I have found the largest variety of gastropods. At the high tide mark I found the Blue Australwink, *Melaraphe unifasciata*, and the Knobby Wink, *Nodilittorina pyramidalis*. These periwinkles I find living 10 to 20 feet above the shore line; usually there are little pools of water left in depressions of the rocks by the waves, and these species are in these pools of water. After each shelling trip I usually salt the specimens in poly bags for one or two weeks and then dry them out. But in the case of the Knobby Wink, I found that this method does not apply. They will still be alive after several weeks of being in the bags. A few minutes over hot running water will suffice to kill them and enables me to pull out the bodies. The operculum is also loosened.

Moving down to the mid-tide level, we come to sheltered areas and larger rock pools. In these live the Black Nerites, *Melanerita atromentosa*, Top Shells, Striated Stomatella, *Stomatella imbricata*, Zebra Top Shell, *A. concamerata*. The Nerites and Top Shells are very abundant.

Hiding in this area on vertical rocks is the Petterd's Limpet, *Notoacmea petterdi*. Then there are the Giant Limpet, *Cellana laticostata*, the Conical False Limpet, *Montfortula conoida* and in large quantity, the Colorful Limpet, *Cellana tramoserica*. I have had some difficulty in determining the numerous varieties of limpets. Here I also find the Black-mouthed Wink, *Bembicium nanum* which I rarely find with the top of its spire intact. This is a bright orange shell. I also find the Mulberry Shell, *Morula marginalba*.

Down at the lower tide level, I have found some Tall-ribbed Limpets, *Patelloida alticostata* and Cart Rut Shells, *Dicathais orbita*. I have not yet devoted much time to this area due to the accessibility depending on the tides. There are many other species such as Tritons, Turbans, Chitons, Ear Shells, etc. which I could describe, but I have not had the opportunity of dealing with these in detail. The opportunities for collecting and the favorable locations are more numerous here than those I have found in the States. Even though this article deals with only common material, the main point is that these species are very valuable to me for obtaining knowledge and esperience about molluscs.

FROM THE MINUTES OF THE JANUARY MEETING

President Dorothy Raeihle opened the 24th anniversary meeting of the Club with greetings from Grace MacDougall, our former corresponding secretary, and Jerry Steele, who are now living in Florida. She also announced the death of George Jacobs, one of the charter members of the Club.

The first presentation by Karl Jacobson was No. 2 in his series on *Polinices duplicatus*. The subject was sex differentiation on the basis of shell characters, or, as it is usually stated, sexual dimorphism. (A summary of this talk will appear in a future number of the NOTES.)

During the break, there was considerable interest in an exhibit brought by Helen Avellanet. This was a group of 11 *Coralliophila*, juvenile to adult, still occupying the cavity in the holdfast of a seafan in which she had found them.

Following the break, Helen reported that the recent collecting trip to Fiji organized by the tour company called Seashells Around the World was poorly managed, and that the company is still experiencing the financial difficulties that have been observed in the past.

The closing presentation was a slide show with narration by G. Raeihle. The pictures covered the Raeihle's November auto trip to Florida, and included Jekyll Island, off Georgia; the damage done to the Route 17 bridge by a ship; the new home, in Inverness, Fla., of Grace MacDougall and Jerry Steele; and Sanibel and Captiva Islands, and the storm damage still visible there. George said that someone proposed a four-lane highway from the bridge to Bailey's store at a recent Sanibel town meeting - whereupon a wave of outrage rolled through the room. MW

SHELLS. by Andreas Feininger and William K. Emerson. Studio Books, Viking Press, New York. 295 pages, 199 plates, 32 in color, plus map and line drawings. 12-1/2 x 10-1/4 inches.

Shell photography is nothing new. I suppose that shells were among the first natural history objects ever to be photographed, and several books of photographs of shells have recently been published. But something new appears when a skilled, sensitive artist does the photography. Photographer Andreas Feininger is such an artist. He sees more than the shell itself, smoothly sculptured and intricately architectured as it is. He sees and captures individula features of the shell, single unique structures, as well as the shell in its relationship to the surroundings. This gives us a book that is in every sense unique.

Though many shells are pictured in their entirety, generally in unusual and striking poses, frequently only parts of the shell form the subject of the picture to bring out startling and handsome architectural structures. Thus the eye is directed to the plastic beauty of these individual and separated features in such a way that when the shell is seen as a whole a deeper appreciation is achieved. For the Tridacna maximus, for instance, we see only one side of the high heavy ribs like white, sliced, plowed up farmer's furrows; an oyster, Lopha cristagalli, is pictured to look like a weird gable in an ancient Gothic castle; a section of the spines of Murex ramosus are photographed to look like pearled waves frozen just as they are about to break; and the limpet Acmaea viridula, fixed to a smooth black rounded stone, looks like a part of the overdecorated breastplate of some Hindu goddess. One of the most striking pictures shows a closeup of one part of Murex cornutus to make it look almost precisely like a land snail seen face on. Every picture elicits thoughts like these in the viewer.

Feininger also does wonders with the backgrounds against which the shells are photographed. There are pebbles, quartz sand grains, drift wood, rounded stones, water spotted glass, and marvelous skyscapes. In each case an admirable artistic unity is achieved between shell and background.

This much for the art lover who delights in all beautiful objects. But the book is also designed for the shell collector. All the shells featured in the 175 artistic plates are reproduced in natural size in an exhaustive, illustrated catalog forming the last portion of the book. The catalog also contains a brief description of each species and an outline of its place in the systematics of the Mollusca. These pictures are coded so that, where only parts of the shell are shown in the posed pictures, the entire shell in life can be seen in the catalog. Of course, this part of the book can also be used to identify shells in private collections. This portion of the book together with clearly worded, enlightening and authorative comments throughout the entire book, is the work of Dr. William K. Emerson of the American Museum of Natural History. Among many other topics, Dr. Emerson discusses such things as the relationship of shell forms to habitat; the molluscan faunal areas of the world; the latest discoveries regarding the formation and function of shell color; the chemical and mineralogical

structure of the shell and its method of deposition, and many many others. This part, in a word, deals with many of the very fundamentals of the science.

This is a magnificent artistic and scientific achievement; it is more than merely a book of "pretty shells." It is artistically satisfying, malacologically enlightening, and conchologically useful, much more than merely another "non-book" for the coffeetable.

The black and white photos are universally excellent and the catalog pictures clear and true. Unfortunately, some of the color plates are reproduced with unnaturally garish tinting. Thus, though the artistic effect may be there, the natural image in the viewer's mind is distorted. However, this is true of only a few of the color plates.

There is also a British edition published by Thames and Hudson Ltd., London, and a German version with a superb translation by Jutta and Theodor Knust and published by Econ Verlag GmbH, Düsseldorf.

mkj

In Puritan England the name of the Deity was not taken in vain. It was merely hinted at. Thus instead of swearing by God's blood Englishmen of that time swore merely "'sblood!" Similarly "zounds" (God's wounds), "'slight" (God's light) and "'snails" (God's nails). (From Jespersen, Growth and Structure of the English Language, 1938, ch. 11.)

ARTICLE OF THE MONTH

Dr. LL.D. Gruffydd, in an article in Journ. Mar. Biol. U. K. 52: 449-455 titled "Mortality of Scallops on a Manx Scallop Bed Due to Fishing," explains how dredge design affects the mortality rate of these mollusks. One third of the scallop population was removed by dredges, another 10%, possibly as many as 56%, died through natural and indirect fishing mortality. In scallops damaged during capture mortality was 13 times as great in the laboratory as those not damaged. It is suggested that an improved dredge design to minimize damage would reduce mortality particularly among undersized discards.

Henry D. Russell

CONCHOLOGISTS OF AMERICA

The Conchologists of America, formed in October 1972 in Middletown, Rhode Island, is a national organization with the aim of placing the emphasis on conchology rather than on malacology. The officers are:

PRESIDENT	Mrs. Bette Rachlin of Brookline, Mass.
VICE PRESIDENT	Mr. Kirk W. Anders of Fort Lauderdale, Fla.
SECRETARY/TREASURER	Mrs. Dorothy Janowsky of Brooklyn, N. Y.

Membership dues are $2.00 per year. Persons interested are urged to write to:

Mrs. Dorothy Janowsky, 946 Ralph Avenue, Brooklyn, N. Y. 11236

SHELLS ARE WHERE YOU FIND THEM

Anne Smith, Dalton, Georgia

Who would expect to find shells, not only inland, but in an old attic chimney corner? An old house, a great old house, was being dismantled. My brother-in-law bought some of the beautiful furniture for his antique shop. He came upon a very dirty and dust-laden box of junk and sea shells. Knowing I loved shells he brought it to me saying "These may not be worth cleaning and you can throw them out if you want to." That was like putting chocolate-covered ice cream before a child and saying, "You don't have to eat it."

These shells went to my clean-up area. By the time I weeded out the dirt, broken ornaments, prisms and trash, I was a sooty mess. After soaking, scrubbing, bleaching, brushing, picking, oiling and arranging, I had over 100 shells. The most outstanding were *Fasciolaria tulipa*, pink, orange-brown, splotched with white and with white apertures. Pairs of *Pecten muscosus* pale apricot, orange and splotched brownish-purple. There were *Pecten ancathodes* and *Thais emarginata*, *Cancellaria reticulata* and *Papyridea spinosum*. I found beautiful *Haliotis cracherodi*, *Conus californicus*, *Oliva araneosa*, *Murex gemma*, *Searlesia dira*, *Acmaea mitra* and *Pusula solandria* as well as *Margarites*, *Fisurella volcano* and a *Placuna* window shell from Japan.

We believe these beautiful shells had been collected long, long ago by a now grown-up nephew of the ladies - he had been in Tampa, Florida and in California as a young man, more than forty years ago. The Florida shells were still beautiful and all were much larger than recently collected shells of the same species. I have many displays, kept together as this collection is, each with its own story to go with the details of the mollusks who created the shells.

Soy hermano de la Ostra de la perla.
De Placuna, la del "vidrio" primitivo.
De la Argonauta, orfebre de la espuma,
que talló el nido en los primeros tiempos.
Del Murex, que al fenicio dió la púrpura.
Del Tridacna, que a la fé sirvió de cáliz
del Tritón, que congregó a los fieles.
Y del Nautilus, de princepesca copa.
Soy el calcinado para el logro de caliza
y la marina casa del Paguro inerme.

by Eliseo Duarte

To the pearly oyster am I brother,
To Placuna, window glass of peasants;
To Argonauta, artisan of sea foam,
Ancient builder of his fragile shelter;
To the Murex, purple of Phoenicia,
To Tridacna, fount for Faith's baptism,
To the Triton, trumpet of the pious,
And to Nautilus the pincely beaker.
They burn me for cementure's lowly purpose
Pagurus makes of me his solid shelter.

translated by M.K.J.

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NYSC NOTES NUMBER 190 MARCH 1973

NEW YORK SHELL CLUB INC.

FOUNDED JAN. 1949

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in Room 319, AMERICAN MUSEUM OF NATURAL HISTORY, with the following exception:

NEXT MEETING: SUNDAY, APRIL 8, 1973, at 2:00 PM *

THE PLACE: BROADWAY DANCE STUDIO (Phone: AS 4-1503)
31-08 Broadway
Astoria (Queens), New York 11102

PROGRAM: * * * PARTY! * * *

AUCTION BARGAIN TABLE DOOR PRIZE RAFFLE
SHELLING ON BARBUDA, BWI, WITH MUSIC AND SLIDES
by Frank Nelson and John Lyons
COCKTAIL HOUR PUNCH BUFFET SUPPER -- AND
CAKES MADE BY OUR OWN EXPERT PASTRY CHEFS.

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SHELL SOCIAL APRIL 8TH

*Doors open at 1:00 PM. Please bring your donations of shells and related items early enough to be put on display. Your donations are needed to make the affair a success, and no item is too large or too small to be welcomed....Veronica Johns is again generously donating a book for the raffle....The color slide presentation with musical accompaniment has been especially arranged for us by Frank Nelson and John Lyons.

It is through the graciousness of Dorothy Jensen that we are able to again have our annual party in the rooms of her Broadway Dance Studio, and we thank her. The studio is easily reached by B.M.T. subway, ASTORIA line, to the BROADWAY stop, which is "at the doorstep" of 31-08 Broadway.

The donation at the door has been fixed for members and their guests at $3.50 per adult, with $1.75 for each child 12 years or younger. Come one, come all! We are really looking forward to a great time!!

SHELL SHOW APRIL 22 - 28

The New York Shell Club will hold an exhibition of shells at the Bergen Community Museum of Arts and Sciences, Fairview and Ridgewood Avenues, Paramus, New Jersey, the week of April 22 - 28, 1973. Advance publicity is creating much interest, thus promising good attendance. Hours will be 9:00 AM - 5:00 PM and 7:00 PM - 9:00 PM.

Those members who have not already informed Chairman Dorothy Germer of the subject and size of their exhibit should do so without further delay. She needs the information in order to complete her arrangements.

Mrs. Germer and Mrs. Ethelyn Woodlock have volunteered to be in attendance every hour of the week-long exhibit. Whatever time you can give them during that week will be greatly appreciated. Get in touch with Mrs. Germer and she will let you know on which days she will need you the most.

In addition to the displays of shells, four programs have been scheduled: On Sunday, April 22, 3:30 PM, "Color Slides of Mollusks and Their Environs", by George Raeihle; on Tuesday, April 24, 7:30 PM, William E. Old will present "Around the World with Seashells". Mr. Old will again speak on Friday evening, April 27, on "Shelling on the Great Barrier Reef of Australia." On the closing day of the show, Saturday, at 11:00 AM, Dorothy Germer will give "An Introduction to Shell Collecting" especially for children and beginners.

We'll see you there! We have prepared a road map and also give you these bus schedules:

GEORGE WASHINGTON BRIDGE BUS STATION, 178th & Broadway, N. Y.

BUS ROUTE No. 40, PLATFORM 34 ("to Paterson"), 24 minutes to BERGEN MALL, change to CROSS COUNTY bus, 10 minutes to BERGEN PINES:

WEEKDAYS: Convenient times for departure of No. 40 to connect with CROSS COUNTY at BERGEN MALL are at 9:40 and 11:10 AM, 12:40, 1:40, 2:40 and 6:34 PM. RETURNS: Connecting Cross County buses leave BERGEN PINES at 1:45, 3:10, 4:15, 5:20 and 8:35 PM.
SATURDAY: Convenient times for departure of No. 40 are at 9:10 AM, (11:10 AM but an extremely close connection), and 1:10 PM.
RETURNS: Cross Co. leaves Bergen Pines at 1:20, 3:50 and 5:25 PM.

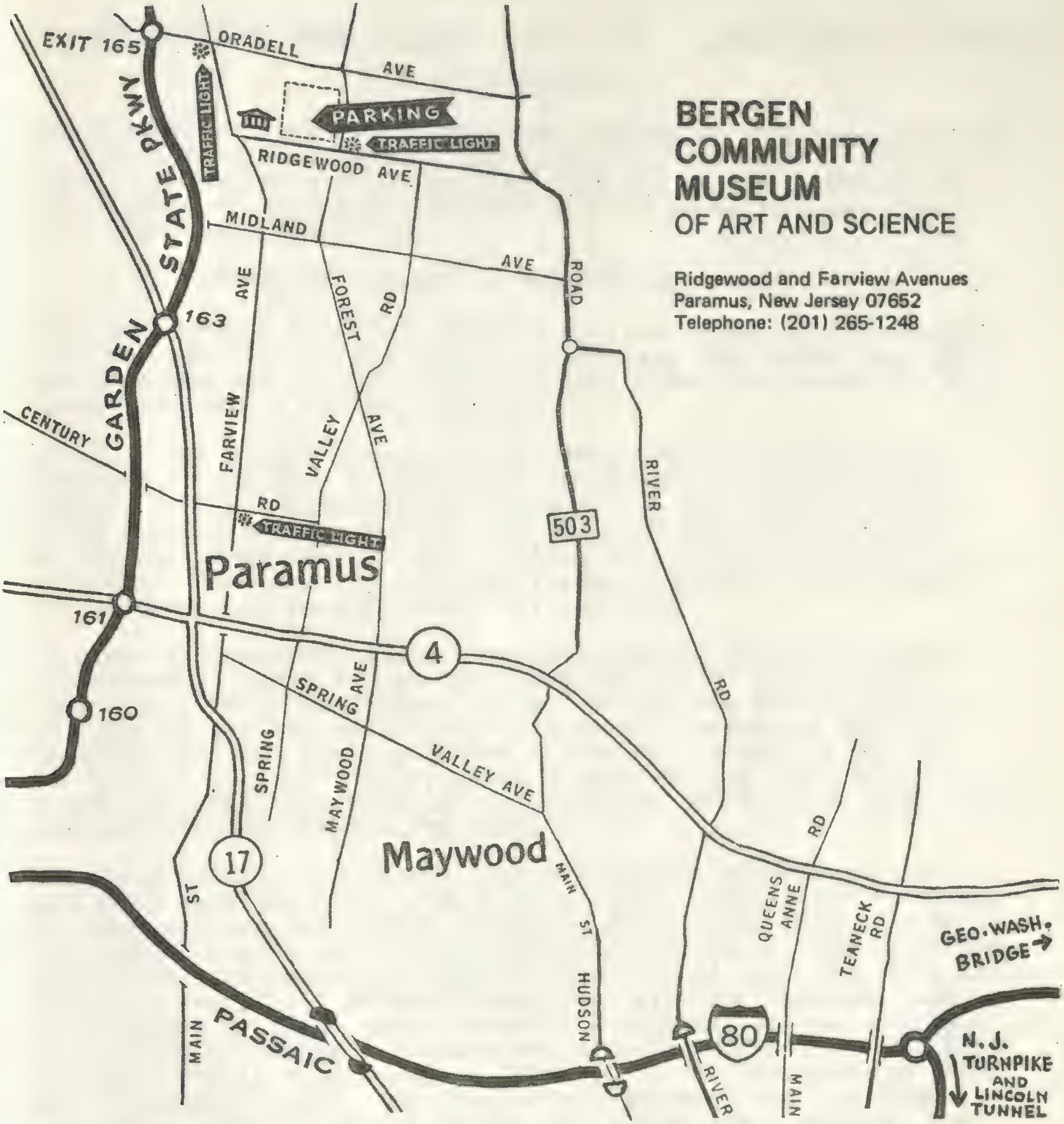
BUS ROUTE No. 82, PLATFORM 20 ("to Hackensack"), 50 to 55 minutes between N. Y. and Bergen Pines with no change of buses:

WEEKDAYS: RETURN, leaving Bergen Pines at 3:40 PM
SATURDAY: Leave N. Y. 1:05 and 2:45 PM. RETURN leaves Bergen Pines 3:50 PM
SUNDAY: Leave N. Y. 12:10 PM. RETURN leaves Bergen Pines 3:50 PM

Bus information, Route 40, (201) 523-5300; Route 82 (212) 564-1114;
Cross Co. (201) 488-0840, nights & Sat. 488-6210
(Ask bus driver to point out the station of your connecting bus.)

BERGEN COMMUNITY MUSEUM
OF ART AND SCIENCE

Ridgewood and Farview Avenues
Paramus, New Jersey 07652
Telephone: (201) 265-1248



Suggested Route:	Rt. 4 to Forest Ave. North on Forest to 4th traffic light, turn left on Ridgewood Ave.
Alternate Route:	Rt. 4 to Rt. 17 North. At 1st overpass (Century Road) turn right to traffic light at Farview Ave., then left on Farview.
From Parkway:	Turn east on Oradel Ave., 165 exit, turn right at traffic light at Farview.
Via Turnpike:	When approaching north terminus use lanes for Paterson, keep right in local lane for I.R. 80 West. Exit at Rt. 17 North ramp, travel Rt. 17 to Century Rd., exit right to Farview Ave. light, turn left.

IN ALL CASES, OBSERVE SIGNS FOR BERGEN PINES.

A CORRECTION

Helene Avellanet points out that her remarks as they were reported in "From the Minutes of the January Meeting", NOTES No. 189, p. 3, referred to the trip to Costa Rica that she and her husband had participated in last year, and NOT to this winter's expedition to Fiji. Our apologies to all.

FROM THE MINUTES OF THE FEBRUARY MEETING

President Dorothy Raeihle read from an item in Skindiver magazine which reports that divers are now prohibited from taking any marine life from Mexican waters. Divers entering Mexican waters for any reason must have a fishing license.

Copies of the poster announcing our shell show in the Bergen (N. J.) Community Museum were distributed, for further distribution by members. The non-competitive nature of the show was clarified in a brif discussion. It was decided that the only recognition of the results of voting (by the visiting public and be members) would be a report in the Notes. It was further announced that members will be scheduled to give talks for visitors.

The first presentation was a showing of slides from the camera of Leo Hernandez. Each was an individually lighted photograph of a single shell, or a small area of it. Making his camera record what his artist's eye saw as the most remarkable feature of each shell, and often creating pictures whose existence depended on his shill with lighting, camera angle, framing and focusing, Leo delighted an audience that expressed its appreciation vocally - or with gasps - from the first picture to the last.

The second speaker was Cecelia Von der Heyden, who reported on a multi-stop shelling trip to Baja California. She opened by noting that she has been exhibiting shells in schools and libraries on Long Island, hoping to make children more ecology-minded by giving them a visual impression of some of the oceans' most beautiful inhabitants. Her first slides showed some of these exhibits, and were followed by those taken during the Baja expedition. Cecelia is fortunate in having a husband who is a test pilot, and the trip was made in their single-engine Cessna. It was adequate for themselves, another couple, and Cecelia's eight-month-old daughter. Cecelia was adequate to collecting while carrying a papoose, and the abundant proof was displayed in a number of trays. The rigors of the climate, the airfields and the "accommodations" were apparent in the slides. Cecelia's enthusiasm easily held out for a month of hopping and stopping that covered most of the length of the gulf coast, and she had more than enough left over to make her narration a real sharing of experience and pleasure.

Milton Werner

COMING EVENTS -- You are invited to join us in a group visit to the Delaware Museum of Natural History on Saturday, May 19th, probably by a share-the-ride arrangement. More in the April NOTES.

TANK RAISED MOLLUSKS

In the Newsletter of the Boston Malacological Club, December 1971, we found the following paragraph:

BRING 'EM BACK ALIVE Calvin Wright notes that a census of his tank, taken on October 29, included "three *Vasum muricatum*, mementoes of camping at Bahia Honda Key last July; one *Polinices duplicatus* from Barnstable Harbor last summer; a single *Thais deltoidea* who has been a resident for over a year, and also one lone *Nucella lapillus*. One *Mitrella lunata* clings to the side, the sole locatable survivor of a number of tinies; *Mitrella*, *Bittium* and *Odostomia*, recently of Swift's Beach in Wareham. Maybe some of them are still there, but that old 'middle-aged eyesight' can't locate them through six or more inches of water. Also in residence, albeit temporarily, are several *Mya* from the local supermarket, a convenient source of food when trips to the seashore are too far apart. Perhaps it was too long since the previous feeding, as the *Polinices* joyfully engulfed the longest *Mya* completely and, losing his grip on the substrate, tumbled head over heels. He then took off, ploughing through the sand from one end of the tank to the other, still clutching the unlucky clam, which was completely covered by the moon snail's mantle."

As several years ago we had a *Vasum muricatum* that lived only briefly in captivity, we were particularly interested in Mr. Wright's successful maintenance of *three* of these Caribbean Vase shells. His letter of June 9th gave us more details:

"My three *Vasum* are alive and well and resting comfortably, thank you, while digesting a bountiful meal of *Mya*. I live within sight of the rise and fall of the tides, but so far from the open sea that the local water is nearer fresh than salt and it takes a fifty-mile round trip for fresh seawater and marine organisms, so I cheat! For less than the price of gas I can acquire three pounds of clams (*Mya arenaria* -- Ed.), most of which end up as chowder, but two are reserved for the tank. The first *Mya* were tossed in during the lifetime of my late *Polinices duplicatus* and were promptly dispatched by him although he proved to be a real gourmet and dined daintily on the choicest parts. This left Mr. Crab and the three *Vasum* to fill the role of scavengers and eat the leftovers which they did quite readily. After six months the *Polinices* departed this life (presumably of natural causes) and the *Vasum* proceeded to eat him. Cleaned him slick as a whistle and his shell remains on the bottom of the tank with no pollution problem. Now the *Vasum* will attack *Mya* directly and feast with immoderate gluttony leaving only a cleaned shell."

Although *Vasum muricatum* is not an uncommon species, we could find no reference, in texts or bibliographies, to a study of their behaviour, feeding, or reproduction. Only two small notes, both by R. Tucker Abbott. (1) in his monograph, "The Genera *Xancus* and *Vasum*" (JOHNSONIA 2:28, 1950, pp. 201-218), "...their main source of food appears to be bivalves and tube worms." And, re: *Vasum muricatum*, "We have not made notes on the living animal, nor seen

egg cases." (2) By 1968, in "Seashells of North America" (p. 148) the notation that Vasum muricatum "Feeds on clams and worms" is now a positive statement. There is no mention of egg capsules.

Mr. Wright's specimens have completed their first year in captivity, in an all glass, 10 gallon tank with aerated, natural sea water, and with no temperature controls. His observations are most interesting and he has volunteered to keep us posted on the Vasum's activities.

dr

AMERICAN MALACOLOGICAL UNION, ANNUAL MEETING

The 39th annual meeting of the AMU will take place June 25 to 28 at the University of Delaware, Newark, Delaware. (Early registration will be possible Sunday, June 24). Inexpensive quarters in modern private-room dorms at about $7.50 per night per person; filet mignon banquet with trimmings only $5.50; refreshments allowed in rooms; average dinner $2.00 -- cafeteria style; beer hall within walking distance. A day's trip with meetings and a tour of the new Delaware Museum of Natural History in Greenville, Delaware, 6 miles north of Wilmington. Last day will include a special field trip to marine labs and the shore. There's loads to see in the "chateau countryside" of northern Delaware.

Limousine service available from the Philadelphia or Wilmington airport. Full information and registration forms will be sent in April. Meanwhile, mark your calendar.

Dr. Dee Dundee, President, AMU
Dr. R. Tucker Abbott, Host Chairman

ARTICLE OF THE MONTH

Andrew Packard in an interesting article entitled "Operational Convergence Between Cephalopods and Fish: an Exercise in Functional Anatomy", in Arch. Zool. Italiano 51: 523 points out that the fish and cephalopod eye, while functionally the same, have very different origins. Other functional similarities are that because they occupy the same adaptive zone in the sea and are subject to the same selective pressures, the vascular, respiratory and nervous systems, hydrostatic control, equilibrium, locomotion and general type of behavior show evident similarity.

Henry D. Russell

F D A TAKE NOTE!

"Wise people eat oysters and eschew pills...By taking oysters daily, they very soon find the most agreeable effects on the human laboratory...Its functions become regular, depression of spirits and other disagreeable feelings...soon cease to affect them, they become cheerful and happy...physical powers return, headaches disappear, and the heretofore dyspeptic, sour, unhappy man becomes a pleasant and joyous companion, full of life, and inspiriting to those around him."

"The Oyster", Trübner & Co., London, (18?)

OBSERVATIONS ON POLINICES DUPLICATUS

III. Drilling and Feeding

Morris K. Jacobson

Naticids gain entrance to the meat of food clams by drilling circular and countersunk holes. The process has been described by Fretter & Graham (1962:248) after Ziegmeister (1954). To break through the shells, the predator uses an accessory boring organ (ABO) secreting an acidlike compound to loosen the calcium of the shell, which is then removed by the action of the radula. Frequently, dead duplicatus (Shark Eyes) are found with such a hole drilled in the body whorl, indicating that the predator will also dine on his own kin. The hole in the dead duplicatus is usually made somewhere on the body whorl where the shell is relatively thin and the hidden meat more or less accessible. But one shell which I recently found on Rockaway Beach has the uncompleted hole directly in the middle of the umbilical callus, the heaviest, strongest, thickest spot in the whole shell. Another specimen had 5 holes around the base, some drilled through, others left incomplete, and we frequently come across specimens with 2 or more holes drilled through in close proximity to one another. The question raised by this apparently useless drilling was discussed earlier (Jacobson, 1965: 5) in connection with shells of different species.

The drilling activities of local P. duplicatus do not bear out what Fretter & Graham (1962:247) say about the drilling activities of the related Natica alderi Forbes of Europe, namely that "it learns how to locate the hole so that it reaches the gonad" (of the clam Macoma balthica Linnaeus). The question of perforations to reach certain vital organs has be no means been solved. The great naturalist, Joseph Leidy, (1878:332) thought that the holes bored by P. heros near the umbo of the Surf Clam "might have something to do with reaching the adductor muscles." He noticed that the two muscles were equidistant from the perforation. These are the muscles which keep the clam's valves shut. It the predator succeeds in cutting them, the valves spring open and the flesh is exposed. However, examination of large numbers of Spisula shells in Rockaway shows that the hole is not always equidistant from both muscles (Jacobson, 1968:6). Moreover it has not been shown that the naticids can ingest food only after the clam shells have sprung apart. The long, highly mobile proboscis probably enables the snail to extract all the flesh through the perforation alone.

H. J. Turner (1955) found that P. duplicatus can also attack and overcome the Razor Clams, Ensis directus Conrad, by a different method. They "coat the razor clam with an envelope of slime which appears to have anesthetic properties (1955:22)." They then eat the paralyzed clam. The duplicatus under his observation was only 15 mm (about 3/4 inch) in diameter whereas the clam was 97 mm (almost 4 inches) long!

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ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, MAY 13, 1973, at 2:00 P.M.

PROGRAM: EUROPEAN MUSEUMS by William E. Old

SLIDES OF SHELLS by Kenneth Sanger

DISCUSSION OF UPCOMING FIELD TRIP(S)

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BOOK REVIEW

A SHELLER'S DIRECTORY OF CLUBS, BOOKS, PERIODICALS AND DEALERS -- by Tom Rice, Of Sea and Shore Publications, P. O. Box 33, Port Gamble, Washington 98364; third edition, 1972, 61 pp., $1 00 plus 20¢ postage.*
*Postage on books: 20¢ for one, 10¢ each additional, maximum 50¢.

This is a useful booklet, particularly to the collector who travels widely or exchanges by mail. There are worldwide listings of 100 Shell Clubs or Societies, some 450 dealers, well over 300 publications, plus shell club papers. No prices are quoted for the publications but are indicated as "expensive", inexpensive", etc. Mr. Rice notes that he has included some out-of-print items that may yet be found in used-book stores.

"Last week a coyote was found at Punta Banda, San Diego County, trapped by an abalone shell.....The coyote had evidently been hunting for a fish breakfast, and finding the abalone only partially clinging to the rock had inserted his muzzle underneath to detach him, but the abalone closed down on him and kept him a prisoner..."

Weekly Bulletin, San Francisco, May 17, 1893

(In Nautilus, Vol 7, No. 2. page 24, June, 1893)

WAYWARD BEACHES AND WANDERING DUNES.

Mathilde Weingartner

Since most of us shell collectors frequent the beaches of the world, it might be of interest to understand something about the formation of beaches, their movements and destruction.

The beaches are the welcome mats of the oceans. But when this welcome mat rolls up, much financial loss and loss of recreation can result. Vanishing beaches have confounded the Army Corps of Engineers, noted for their successful attempts at most other projects. But the beaches need to be studied, each individually, before anyone can successfully hold them in position.

Most beaches are born, not on the shore or in the sea, but in the mountains, among glaciers, rocks, frost, wind, rain and rivers, lakes and streams. The quartz grains are gradually ground into sand. At the margins of the sea one can see the unique beach environment lying between the water and the solid earth. The coastal environment is also dominated by rivers, rainfall, waves, tides, rock masses, vegetation, and animals.

Marine waves are one of the main forces in the building and tearing down of the beaches. Two basic principles are involved in their action: The depth of the water decides the speed at which the waves travel and the passage of each wave passes a small amount of water along. A small float put on top of a wave at a given point will show that the waves pass along in a circular motion, only a small amount of forward movement results.

Large waves are produced by storms, which will travel out of the storm areas in all direction, sometimes striking the shore thousands of miles away. Waves usually strike the coast at an angle, not parallel to the coast. Then they refract or bend. The ones that get to the shore first are slowed up by the decrease in depth, the further out sections coming along faster, till they too are slowed by the decreased depth. The wave then approaches more parallel to the shore. The energy of a wave is always at right angle to the wave, directly forward of whatever the part of the wave it is. On irregular coasts the energy is stronger on the headland, than on the bays on either side. This explains why waves are so spectacular on rocky promontories and why no sand accumulates there. The force of the waves is so strong that it erodes the headlands, and sand is easily transported to quieter bays. Each wave coming into shore transports a small amount of water in the same direction. This water accumulates inside the surf zone, then moves along the coast. This flow, close in to shore is called the LONG SHORE CURRENT.

The Long Shore Current can also carry the sand away from the beaches, while bringing in a fresh supply from the direction above. The currents usually travel in one direction, hence a certain stability is acquired. However, storm waves can tear away at the beach, removing sand much

faster than it can be deposited. In the winter more storms appear, in the summer some of the beaches recover. Deep canyons can catch considerable amounts of sand.

Beach erosion alone is the cause that can be controlled by man, though often only partially. First, the barrier beaches were meant by nature to be just that, barriers to protect the land behind them. However, these Atlantic coast beaches have been the summer salvation of the sweltering East. Dunes have been removed, and cities built: Cape May, Atlantic City, Asbury Park to name a few. Now the people put up with blowing sands, hurrican damage several times each year, destruction of beach installations, and possible loss of life.

The Army Corps of Engineers, charged with the protection and improvement along our shore, has gone to great extremes in the execution of its mission. Large sea walls have been built to repulse the enemy. Often these foster a severe backwash in the surf, which undermines the walls, and hinders beach recovery. Another method is building the jetties or groins. These jut out at right angles from the shore. The problem here is that sand accumulates on one side and is removed by the Long Shore Current from the other.

Primarily the dunes are a creation of the wind; sand is picked up from the beach and deposited where the air current slows, such as near vegetation, on an up rise of land, etc. The sand is thus deposited in ever-growing heaps, to increase the size of the hill or dune. The dunes and beaches are thus needed for the existence of each other. There comes a time when the dune cannot increase in size upward. This point seems to be reached when the quantity of sand on the leeward side of the dune equals the quantity of sand on the windward side. Then the wind slowly begins to move the dune landward. Grasses, weeds, and even trees slowly become buried, first resisting, later giving up the ghost. The blowing of sand and salt also descicates the leaves of most plants, and causes damage to bark and branches of trees. Some plants are specially adapted -- Hudsonia and beach pea cling close to the ground, thus escaping the strong winds. Bayberry and Goldenrod have thick leaves; beach grasses have very narrow leaves, giving little wind resistance.

Sand vegetation on dunes is very important to keep them from disappearing altogether. Cows should not graze there, as King Christian of Denmark proclaimed in 1539, to keep Jutland from blowing away. The dunes at Cape Hatteras, now protected from grazing cattle, are at present subject to devastation by road builders using sand for roadfill.

Among the dunes and beaches we have a constant scene of checks and balances, and if man were not there, no one would worry about a certain loss of shore. But man, with his buildings, his beach buggies, his boardwalks and piers is due for great inconveniences, financial losses, even great loss of life because he does not appreciate the real forces of nature.

FROM THE MINUTES OF THE MARCH MEETING

Six new members were introduced. Historian Nick Katsaras read two newspaper articles, the first of which excerpted from an article in the British magazine "Nature" about the vast amounts of non-biodegradable trash that litters the ocean floor. Many items in the tons of offending materials -- chiefly plastics, glass and rubber -- are in forms that can inescapably entangle fish and other marine creatures. The second reported on snail races held by college students, who clocked the outstanding speedsters at 40 feet per minute.

President Dorothy Raeihle announced that Dr. R. Tucker Abbott, of the Delaware Museum of Natural History, had responded to our inquiry by writing that May 19 would be a convenient date for a group visit to the Museum by Club members. He will arrange a tour of the Mollusk Department, and a one-hour motion picture.

Richard Ellis, a recent new member, showed slide photos of a number of paintings he has made of shells in his collection. He is a professional artist, and the originals of the paintings were, at the time, the subject of a one-man show in The Gallery, on Sanibel. He noted that several had been sold.

The Shell-of-the-Month, by George Raeihle, was the keyhole limpet, *Lucapina sowerbyi*. He showed slides made of a live specimen from Grassy Key, Fla., which had found a new home in Mrs. Raeihle's home seaquarium. The photos revealed the delicate beauty of the flaring mantle and the long tentacles.

Mrs. Raeihle read a clipping in which the New York Times reported that the tiny Asian clam, *Corbicula manilensis*, has made its first appearance in the northeast, after having started its march across the country on the west coast. It has proliferated in the Delaware River, between Philadelphia and Trenton, in numbers that threaten to crowd out other water life. It has already clogged water intakes and other pipelines.

Ethelyn Woodlock showed slide photos of the display cases of *Oliva* her collection. She has all but 11 of the known species, and has filled those empty spaces with carved and painted wooden models.

Member Florentin Maurasse, a geologist, described with slides and narration the ecology of land snails in the area south of Marseilles, France. He spent three years there, while studying geology, and collected frequently between Marseilles and Cassis, and on the island of Chateau d'If. This is an area of rugged linestone mountains with little vegetation, but collecting is both easy and rewarding. Snails are everywhere, and he reported finding 37 species, noting that there are still more. He showed slides of the terrain, snails on rocks and shrubs, and close-ups of shells against a measuring scale.

Milton Werner

LAND SHELLING IN THE RAIN FOREST

Frank and Lee Nelson

Anyone who has visited Puerto Rico is certainly familiar with the sight of the Luquillo Mountains, about 25 miles east of San Juan, and clearly visible from the airport and much of the city. It is an imposing sight, both from the surrounding countryside and from the air, with the higher peaks nearly always hidden in the clouds that hang over them.. This area, 28,000 acres in size and more commonly known as El Yunque or the rain forest, is the only tropical rain forest in the U. S. National Forest System. It is an experimental forest, as well as a bird sanctuary, and incredibly beautiful with its panoramic views, waterfalls, birds and lizards, colorful flowers and other tropical plants that tend to become more primitive the higher one goes into the forest. And the call of the coqui, a tiny tree frog unique to Puerto Rico, can be heard everywhere. Over 100 billion gallons of rain fall on the forest annually, making this a true paradise for the land sheller. As one might expect, the showers are frequent and at times heavy, but usually brief.

The rain forest can be reached easily by taking Route 3 east from San Juan and turning south on Route 191, the main road through the forest. This road is a good one, with many parking areas, a restaurant and recreational area, and distances marked in kilometers (1 K = 5/8 mi.) and hectometers. Unfortunately, we were able to spend only one day there in November, but the experience and shelling were so rewarding that we are planning a return trip soon.

As we proceeded up the mountain, the changes in the vegetation and in the snail population were quite remarkable. At our first stop, kilometer post K5.7, we began finding *Chondropoma yunquei* H. B. Baker and *Megalomostoma croceum* (Gmelin), mostly on or near the many stone walls bordering the road. We also found a number of *Nenia tridens* (Schweigger) exclusively on these same stone walls, contrary to a statement by H. B. Baker quoted by van der Schalie in "The Land and Fresh Water Mollusks of Puerto Rico." Baker states that *Nenia tridens* is found "mainly on shrubs and vines, almost never on rock faces." At K7.8 there were many *Pleurodontes carocolla* Linne, the largest of the Puerto Rican land snails, in great numbers on nearly everything, and at K8.6 one dead specimen of the rare *Pleurodontes luquillensis* (Shuttleworth). Above K8.6, we found no more *C. yunquei*, *M. croceum* or *Nenia tridens*, and by the time we had reached the restaurant and recreational area, about K12, even the *P. carocolla* seemed to be less abundant.

Here, strangely, the vegetation made an almost abrupt change, and with it, the type of snails. We began to find many *Polydontes acutangula* (Burrow) and, interestingly, without exception, on only one type of plant. We had not seen either this snail or this plant at the lower elevations, and suddenly both appeared in great numbers. *P. acutangula* is a beautiful and fascinating little creature, the shell and animal being a rather uniform cream color with a thin black

line around the edge of the foot. The animal is proportionately large and cannot fully retract into the shell, but when disturbed, it exudes copious amounts of a tenacious yellow slime. In this same area, quite a few helicinids were to be found crawling on the walls, walkways, plants and patio of the restaurant.

Of equal interest and importance, no doubt, are a few of the things that we did not find. There were relatively few mosquitos or other annoying insects, and no snakes or scorpions that we saw. The very common Bulimulus guadalupensis is not found in the rain forest, although this is probably the only place on the island where it is not found. The equally common Subulina octona has been reported from there, but we found none. Nor did we at any time find any snails on the bamboo. Of course, these are observations made in only one day. Perhaps at another time of year or on more extensive exploration, the findings may be different.

We did not attempt any fresh water collecting in Puerto Rico, and anyone planning a trip there should be cautioned against it because of the danger of schistosomiasis. This is a parasitic disease, and the type occurring in Puerto Rico is particularly severe and resistant to treatment. The fresh water snail is the intermediate host for a blood fluke that invades the body by penetrating the skin and matures for 1-3 months in the liver before invading other organs. Normally this is a great danger in dirty or stagnant water. The rather clear, fast-moving streams of the rain forest are perfectly safe and free of this parasite. In order to collect in contaminated or suspect waters, some people have devised their own protective methods, ranging from rubberized clothing to washing with various chemical solutions and using special collecting equipment, etc. But since the land shelling is so productive, carrying along all this cumbersome extra gear hardly seems worthwhile for the average amateur collector.

ARTICLE OF THE MONTH

Many devices for food capture are used by mollusks, but one of the most interesting is discussed by Dr. Ronald W. Gilmer under the title, "Free-Floating Mucus Webs: A Novel Feeding Adaptation for Open Ocean," in Science 176: 1239-1240, 1972. These webs were studied by scuba techniques in highly modified gastropods of the order Thecosomata. Free and unsupported webs were used to collect food particles. The gastropods' delicate bodies, quick reactions, and apparent abundance suggest that traditional plankton sampling methods may be inadequate to measure their importance in blue-water plankton communities.

Henry D. Russell

MORE ON THE SLIME OF SNAILS

Morris K. Jacobson

Some time ago I presented in these pages(Dec. 1969, NOTES 157:6) some notes on the role that slime or mucus plays in the life history and physiology of mollusks. In a recent film on NBC-TV I saw a use for snail mucus that deserves mention here.

The film, produced by Joan and Alan Root, was called SECRETS OF THE AFRICAN BAOBAB. The baobab is a queer tree in Africa which is much used by birds and other animals for shelter and food. This film showed a segment of the hatching and fledging of the Horn Beak, a large-beaked, colorful bird. The entire process is quite peculiar. The female, when it is ready to lay the eggs and hatch the young, enters a hole in a fat baobab tree and with mud seals up the entrance to its burrow so that only a tiny opening is left through which her faithful mate sends in food for the mother and her young, as soon as they hatch. In a few weeks the young have grown enough so that the mother, now becoming restless, has to leave. With her huge powerful scimitar-like beak she pounds away at the obstructing hard-caked mud till the entrance is large enough for her to squeeze through. Now the still imprisoned young have to repair the damage and restore the entrance to its original diminutive size. To help them in this task, the mother gathers slugs and other sticky substances which she passes in to the nest. The young mix this sticky stuff -- including the slug mucus -- with debris and their own waste products and use the resulting mass to close up the entrance to the nest. A bright bird has found a new use for molluscan slime which the mollusks had produced for their own use.

BOOK REVIEW: "WHAT IS A SHELL?" by Tom Rice, editor of "Of Sea and Shore" magazine. Ellis Robinson Publishing Co., Inc., May 1972. 64 pp., glossy stock, 225 species illustrated in color on 30 plates and the cover. $2.00 plus 20¢ postage from the author, P. O. Box 33, Port Gamble, Washington 98364.

This booklet is directed to children, to introduce them to the Phylum Mollusca. A page of text faces each plate and in simple language touches on the habitats of the animals, their food, perhaps a commercial use, and other interesting bits of information. The paragraphs are headed by the common names of the genera or group pictured on the facing plate; the Latin name of each species if listed at the bottom of the page.

Since this book is for children and beginners, it would have been useful to supply an English name for each species instead of limiting the nomenclature to small italicised scientific name only. The figures photographed by "a special direct color process" by Ellis H. Robinson are excellent. They show up fresh and vigorous on the smooth glazed paper. Like all popular shell books -- barring none -- this one also has its share of errors, none very serious.

MKJ

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NYSC NOTES   NUMBER 192   MAY 1973

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FOUNDED JAN. 1949

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ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, JUNE 10, 1973, at 2:00 P.M.

PROGRAM: REMARKS ON WESTERN ATLANTIC ANACHIS
by Dorothy Raeihle

REVIEW OF LOCAL SHELLING AREAS -- by members

1973 REPORT ON SHELLING IN THE 'GLADES' & SANIBEL
by Morton Hahn

COLOR SLIDES OF NYSC'S FIRST SHELL SHOW

NOTES ON TWO SUCCESSES

The April "Shell Social" meeting at Dorothy Jensen's "Broadway Dance Studio" was a great success in every way -- socially, conchologically, gastronomically and financially. Many thanks are due to all the dedicated members who helped to make it a delight! Most of all to Dorothy Jensen, as always.

Also, the first New York Shell Club's "Shell Show" at the Bergen Community Museum of Arts and Sciences in New Jersey was met with such enthusiasm and fine response by exhibitors and volunteering members, that the way is pointed for more such exhibitions in the future!

We gave of ourselves and our collections, and gained friends, interest, and recognition!

Again, thanks to all!

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A HIGH SCHOOL FOR OCEANOGRAPHY

Maxwell Cohen
Beach Channel High School, Rockaway Beach, N. Y.

A large urban high school with an interdisciplinary specialty in oceanography; a school in which science students spend one day each week sloshing in coastal mud flats and cruising in offshore waters in their quest for specimens and knowledge; a school in which teachers of all subjects teach in terms of ocean, bay, and sound. This is New York City's new Beach Channel High School in Rockaway Beach, scheduled to open its doors to its first class of young oceanographers in several months. Eventually the school, occupying twenty-one acres of Jamaica Bay shoreline, will accomodate 4000 students who will participate in the nation's first schoolwide program in oceanography. The goal of this unusual theme is not simply to train a corps of science-minded students to respond to a future call for oceanologists, but also to utilize the unique location of the school for motivating an interest and involvement in all subject areas.

The school complex will include a launching ramp and a pier which will be put to much practical use by classes working with the small fleet of whalers and inflatables. A fully-equipped boat maintenance shop will make it possible for students to build and repair a variety of small craft and engines. Salt water pumped in from Jamaica Bay will be filtered and piped to dozens of marine aquaria intended to house the organisms that will challenge generations of ocean-conscious students. A controlled-climate chamber, a photographic darkroom, refrigerated fish tanks, and a 15-foot wave tank will enable students to become involved in significant, experiential activities.

In addition to the library facility associated with conventional high schools, Beach Channel High School will have a separate oceanography library-museum to contain a large number of books, periodicals, audio-visual materials, and museum displays dealing with the world of water. The library will serve as a resource and information center not only for the student body, but also for the surrounding community which has deep roots in the sea and depends upon the economic benefits it provides. The oceanography library, perhaps more than any other facility, will help the Beach Channel High School to achieve its goal of adding a new dimension to the unique marine environment of Rockaway.

-- "Books and Periodicals for an Oceanography Library,"
Bureau of Curriculum Research, Board of Education, NYC.

"The conventional mind is at best a petty piece of machinery. It is oyster-like in its functioning, or, perhaps better, clam-like. It has its little siphons of thought-processes forced up or down into the mighty ocean of fact and circumstance; but it uses so little, pumps so faintly, that the immediate contiguity of the vast mass is not disturbed."

Theodore Dreiser, in The Financier, Ch. 30

SHELL COLLECTING NOTES

Earl H. Reed, Senior Curator
Springfield Museum of Science, Springfield, Mass. 01103

I. TYPES OF COLLECTIONS

While not absolutely necessary, it is wise, whether you are a beginner, or have been collecting for some time, to consider what type of collection you want, or may already have. Collections may generally be classified as one of four major types, as follows:

1.) Show Collections. In this type of collection, emphasis is on the larger, more colorful, "pretty", bizarre or "rare" species. The smaller, less attractive species are either ignored, or collected sparingly. In general, specimens are chosen which will look well on a knick knack shelf, in a glass-topped coffee table or cabinet, or in some sort of display case. Because large, showy shells are a small minority of total species, such a collection will be drastically limited in numbers of species, and, for the same reason, many interesting families of mollusks will be excluded. Its purpose would be to illustrate how attractive mollusk shells can be, and to display its owner's artistic selectivity (and, in some cases, his affluence). The scientific value of such a collection is usually minimal, and it is disparagingly referred to by many professionals as "Oh, My!" collection.

2.) Synoptic Collection. In this type, an attempt is made to include as many families, genera and species as possible. Specimens are, usually, organized and catalogued in accordance with some accepted taxonomic classification. As the number of existing species is immense, such a collection is never complete, but may be roughly evaluated by comparison of numbers of species included from any given fauna with the approximate total species recorded from such areas. The collection may be limited to either marine forms or land and fresh water species, or may include both. The beginner might strive for, say, 1000 species, then 2000, and so on. As the number increases, the difficulty of adding new species also increases, but, for most collectors, this only adds to the satisfaction of the search. Because of the great diversity in size, housing will be a problem, but this will be referred to elsewhere.

If the collection is moderately comprehensive, and if locality data is adequate, it will have taxonomic value and modest scientific importance. It will serve to show the great diversity of size, form and evolutionary adaptation found among mollusks. It will serve as comparison material for the identification of other specimens. It may illustrate the phylogeny and relationships of the various larger groupings of mollusk species, particularly if a sprinkling of fossil species is included for comparison.

Most large private collections, and most of the older museum and university collections are of this type, and correspond roughly to what are sometimes termed the "alpha and beta" levels of taxonomy; the naming classification of living things.

3.) Study Collection. While the foregoing is certainly a "study collection" of sorts, modern taxonomy is concerned less with simply "naming" and "classifying" species, and is more and more involved with the study of "populations", their ecological ties to various environmental factors, and their variation in response to such relationships. It is now recognized that no two living things are precisely alike in every way, and that such things as geographical "races" and "clines" exist. These and similar concepts have tended to raise havoc with the older ideas of "species", each distinguishable by certain unalterable characteristics, and each neatly "pigeon holed", and distinct from all others.

For such studies, a collection containing as many "lots" as possible is desired. (A "lot" is one or more specimens of a single species collected at the same place and time.) Only by careful comparison of specimens taken at many places and at different times can limits of variation, ecological variants, "forms" and subspecies, be put in proper perspective and evaluated. Obviously, precise locality data is of prime importance in such a collection.

Because numerous lots, containing many specimens, take up a great deal of room, such a collection is usually beyond the resources of the amateur, unless limited to a very modest number of species, although "synoptic" collectors will usually try to include examples of subspecies and well-marked ecological forms or "color varieties", etc.

4.) Specialized Collection. This term is used to cover a considerable variety of collections which are limited in either taxonomic or geographical scope. One may collect mollusks of a single superfamily, family, genus or species. One may collect only the mollusks of a specific faunal area, large or small. One could collect mollusks found at depths below, say, 100 fathoms, or those found only at high elevations on mountain tops. One may collect abnormal or "freak" shells, or "growth series", illustrating the changes from juvenile to adult. There are endless variations.

The scientific value of a specialized collection may vary according to several factors. Obviously, a good local collection from some out-of-the-way place not often visited by collectors can be of great value in providing new records, and perhaps extending the known range of species. Likewise, a well documented and extensive collection of species of one family or genus will provide good comparative material for a study of that particular group or taxon. Specimens collected from one locality at all seasons of the year, for everal years, will give evidence of seasonal variation in size and numbers, and perhaps of breeding times, growth rates, and other useful information.

Finally, it must be admitted that many collections may partake of characteristics of any of the foregoing. A large, general collection may contain, within it, long series of specimens of certain genera or species. It may contain excellent coverage of the collector's local area, but few or no shells from certain other faunas. It is

also quite possible that as interest grows, a collection may also grow, from a few specimens on a knick-knack shelf, to a large general collection, and ultimately, perhaps be again revamped to a specialized collection.

The subject is not of major importance, perhaps, but it is of more interest to collect with some sort of goal in mind, so that when, ultimately, the collection is passed on, it will be something a bit more than just a "collection of seashells", of little interest or value to succeeding generations.

REVIEW: A Systematic Revision of the Recent Cypraeid Family Ovulidae, by Crawford N. Cate, Veliger, volume 15, supplement, 116 pp., 51 pls., 4 in color. $12.50.

The richness of the species in the Ovulidae is surprising. This beautifully illustrated monograph presents them with gratifying clarity. The species Rotavula hirohitoi Cate & Azuma, for instance, with the rounded knobs at the shoulder is an amazing form and, from the point of view of shell morphology alone deserves to be in a monotypic genus. Other species are only slightly less striking. In all Mr. Cate introduces 86 new specific and subspecific names and 19 new genera and subgenera. An examination of the features of shell morphology upon which these novelties are based seems to justify this classification. But as the author himself points out, since this work omits reference to radulae and soft parts of nearly all species, "a future study of this group will probably make further taxonomic revision necessary." This is particularly true because many of the novelties are based upon rather small series of specimens. There is a well illustrated glossary of the terminology employed and a most satisfying index. But the reader feels the lack of an identification key to lend a ready overview to the whole field. As a minor point, Ovulidae should be called a cypraeacean or cypraeoid family, not a cypraeid. All in all this is a well-produced and superbly illustrated handbook which, no matter what the final disposition of the taxonomy is, will leave with the reader a clear view of the unexpected richness of the family. The plates of illustrations, to make reference easier, are placed near the descriptions rather than being bundled together at the end.

mkj

ANOTHER SIGHTING

In the first of the observations on Polinices duplicatus (NYSCN No.186, p. 7, November 1972) we printed Dr. William J. Clench's remarks on a swimming specimen he and Dr. Ruth D. Turner had seen in Sanibel, Fla. in 1953. Mrs. Lorraine Ridge of St. Augustine, Fla. is good enough to send us the report of another such sighting. She writes: "My husband, Bill, and I have also seen Polinices duplicatus Say swimming. It was July 3, 1964, 4:00 A.M. at low tide, intertidal area, St. Augustine, Florida. This strange happening occurred during our first night-shelling trip. Shortly after arriving at the south end of the lagoon,

south of St. Augustine Inlet, we began wading in shallow water with light from a Coleman lantern. Suddenly we were startled by something unfamiliar swimming toward us. You can understand our surprise and amazement when with a tap from a pokey stick the thing turned out to be a Moon Snail." Mrs. Ridge was kind enough to mail me the shell of the animal involved. It measures 48.5 mm (about 1-1/1 in.) in width and 42 mm (about 1-1/4 in.) in height, thus being considerably larger than the shell seen by Dr. Clench. The angle of divergence of the spire is 80 degrees, indicating that it was probably a male specimen. Mrs. Ridge can only guess the length of the swimming animal -- it happened almost 8 years ago -- but she judges that about 5 inches is a conservative estimate. As far as the editor knows, this is only the second "sighting" of such an event to appear in print. He would be very interested if his attention is called to other such events, either those personally witnessed or those reported in the literature.

mkj

FROM THE MINUTES OF THE APRIL MEETING

The April meeting was the Club's annual social gathering, held, as in past years, in the Broadway Dance Studio, Astoria, Queens. Over 80 members and guests attended.

After the briefest of business meetings, the special program got underway with an auction featuring an extensive array of shells, donated by members, the American Museum, Seashells Unlimited and The Collector's Cabinet. Bill Old again served as auctioneer, fanning the competitive flames by pointing out the noteworthy aspects of almost every specimen and/or species he offered. The quality of the material and the occasional unusual bargains made the successful bidders happy. The fixed-price table, under Harold Feinberg, was busy whenever it was open for business.

The auction was followed by a three-prize raffle. The prizes were: copies of "Shells and Shell Collecting" and "Seashells", both by Peter Dance, donated by Seashells Unlimited; a copy of "Shells", by Roderick Cameron; and a mouth-watering Voluta kurodai, donated by The Collector's Cabinet. A drawing for a door prize rewarded the winner with a fine Cypraea teulerei, donated by Dr. Donald Bosch.

Vice-President Frank Nelson and his son-in-law John Lyons then presented a slide show titled "Shelling on Barbuda," a word and picture record of a successful Caribbean shelling expedition that touched at Puerto Rico, St. Martin, Sabu and Antigua before settling down to extended shelling at Barbuda. The atmosphere conjured up by the scenic photos was accentuated by a background recording of native music. A cocktail/punch/chatter period followed, to sharpen appetites for the buffet supper that climaxed the afternoon.

Milton Werner

ASIATIC CLAM REACHES THE ATLANTIC SLOPE

Since approximately the turn of the century biologists have been watching with both interest and apprehension the steady migration of a small freshwater Asiatic clam, Corbicula manilensis (Philippi), as it spread eastward from the Pacific coast. The species is extremely prolific; the populations become so dense that they compete with native species and cause industrial problems such as clogging of pipes and ruining sand for use in concrete. Corbicula manilensis has finally made its way to the Delaware River. Newspaper articles tell of an infestation of the river from Trenton to Philadelphia. It is reported in April's NAUTILUS (p. 59).

DR

NOTE FOR A HISTORY OF CONCHOLOGY IN NEW YORK

In Nautilus, Vol. 22, No. 11, P. 124, for March 1909, there appears an obituary for a David Wilson Ferguson, a New York collector of considerable note. It might be interesting to share some of the details of his life with present-day New York shell collectors, by excerpting the following:

"Mr. David W. Ferguson, whose death occurred on February 7th, in his 75th year....began collecting shells in his eighth year, continued up to the time of his death, and became one of the most discriminating collectors in New York City. His knowledge of shells and ability to recall names was remarkable. In his early life he enjoyed the friendship of Bland and the elder Sowerby, and also of Dr. Jay, Stuart, Steward, Constable and all the collectors in New York of the last half of the 19th Century. One of his most intimate friends in later years was the late Sloman Rous, (1838-1907) who described several unusual species in his collection in THE NAUTILUS some time ago. Mr. G. B. Sowerby named a large white cone, Conus fergusonii, which Mr. Ferguson had sent him for identification. It is a fine and distinct species...."

The local form of the Tortoiseshell Limpet, Acmaea testudinalis fergusoni Wheat, and Anguispira alternata fergusoni Bland were also named for him. In 1903 Mr. Ferguson lived at 303 Stuyvesant Avenue, Brooklyn, New York. His magnificent collection was bequeathed to Columbia University where it apparently came to ruin. (see Notes No. 113, p.7).

Submitted by Mart Hulswit

A GIFT TO THE NEW YORK SHELL CLUB LIBRARY

We acknowledge with thanks the gift of the book SHELLS, by William K. Emerson and Andreas Feininger. The volume was donated by Paul Ucko, who presented it to us at the meeting of December 10th.

NYSC NOTES NUMBER 193 JUNE-JULY-AUGUST 1973

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FOUNDED JAN. 1949

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ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, SEPTEMBER 9th, 1973, at 2:00 P.M.

PROGRAM: SCANNING THE COAST AT BIARRITZ by Monique Caubere

REPORT ON 1973 MEETING OF WESTERN SOCIETY OF MALACOLOGISTS by M. K. Jacobson

REPORT ON 1973 MEETING OF AMU

SHELL-OF-THE-MONTH

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CORRECTION: Re: Monograph on Ovulidae, reviewed in NYSC NOTES 192:5, the price of $12.50 given by Mr. Jacobson applies only to members in good standing of the California Malacozoological Society provided they purchase the monograph during the current volume-year. To all others the price is $15. For purchasers in both categories, there are further charges as follows: postage and handling within the U.S. $.75, to overseas addresses $1.40; California purchasers must add the applicable sales tax.

Jean M. Cate, Manager, C.M.S. Inc.
P.O. Drawer R, Sanibel, Fla. 33957

IN BRIEF

ANNUAL ELECTIONS JUNE 10: The entire staff of incumbent officers was reelected for another year by unanimous vote of members present.

THE EXCURSION TO THE DELAWARE MUSEUM OF NATURAL HISTORY May 19 was so interesting and enjoyable that we recommend that it be included in your itineraries. (AMU delegates will have a conducted tour June 26.)

THE FIELD TRIP TO ORIENT JUNE 9 was in hot and sunny weather. Beachcombing and wading were not too profitable; those who snorkeled in deeper water had more exciting finds. We had a great day, anyway.

TO ORDER YOUR SHELL DESK DIARY FOR 1974: Send $2.50 before July 31 to Shell Oil Company, One Shell Plaza, Room 1536, Houston, Texas 77002.

AUCTION OF SHELLS (From two collections) by Nick Katsaras, Sunday, September 16, 1973. Details early in September.

NYSC ROSTER: Helene Avellanet has volunteered to type a complete roster for distribution in September.

FIRST SHELL SHOW OF THE NEW YORK SHELL CLUB

For several years the idea of the New York Shell Club holding a shell show has been latent, but it took an enthusiastic few of our Bergen County (N.J.) members to find an economical site and make it a reality. Their continued inquiries finally resulted in an invitation last June from the board of directors of the Bergen Community Museum of Art and Science, in Paramus, New Jersey, to hold a shell show the week of April 22 - 28, 1973, with all donations and one-third of net profits from any sales to go to that museum.

The attendance on opening day and throughout the week was most gratifying. Even on rainy days the steady number of people streaming in was almost unbelievable. There were visitors from Cambridge, England; Rochester, New York; Pittsburgh, Pennsylvania; southern New Jersey; Philadelphia; Newburgh, New York, and far away areas in Long Island. Congressman Frank Osmers, of the 9th Congressional district, was a very interested visitor. Dr. and Mrs. R. Tucker Abbott traveled all the way from Delaware to see the show and they expressed their pleasure.

Many people, club members and others, worked hard to make the show successful: Charlotte Jensen, Marion Moss, Theodora Sigg, Mr. and Mrs. Lamberton, Mart Hulswit, Sol and Mary Weiss (makers of many display cabinets who contributed any profits they made from them to the treasury of the Club), Mr. and Mrs. W. Kreiger of the Bergen Community Museum, Dr. and Mrs. Barton Barlow, Dorothy and George Raeihle, and others. The work of these people ranged all the way from providing encouragement and publicizing the show to hard physical work setting up the exhibit and seeing it properly dismantled after the show was over. Of particular value was the delightful and effective poster designed by member Leonardo Hernandez which was printed and distributed widely to various groups from Audubon to Wildlife, Cub Scouts to Golden Age, as well as to clubs and schools. Even the newspapers took notice of the event. George Raeihle aided immeasurably by preparing and having printed a road map to guide visitors to the museum. But none of this could have been possible without the really devoted work of Chairman Dorothy Germer with the active assistance of Ethelyn Woodlock, Bill Old, Helene Avellanet, Adele Nahlovski, and John Germer.

Twenty-nine members of the New York Shell Club were represented in the forty-nine exhibits which comprised about sixty-five displays plus a number of paintings. The Bergen Community Museum took part with the story of the Campbell family's wampum mint which was situated in nearby Park Ridge during the years 1770 - 1899.

At the Bergen Museum's 16th annual Board of Directors meeting, Mrs. Germer and Mrs. Woodlock presented to that museum a check for three hundred ten dollars, representing donations and the percentage from sales. They also presented them with the Giant Clam, Tridacna gigas, on behalf of the Department of Living Invertebrates of the American Museum. The specimen was from the collection of the late George Jacobs, and one valve of the enormous clam had served during the exhibit as an inviting receptacle for donations.

Certificates have been given to each participant as a memento of the Club's first shell show.

MKJ/DR

EXHIBITORS AND EXHIBITS SEEN AT NYSC SHELL SHOW

Helene Avellanet	*Phasianella*, *Turbo petholatus*, *Corculum cardissa*, Natural colors in shells, X-rays.
Alice & Barton Barlow	Postage stamps and their shells, Shells and their photographs in life, New Jersey marine.
Bergen Community Mus.	Story of a New Jersey wampum factory.
Myra Chaplin	Dominican Republic marine spp., Chitons Canada to Mexico, Variations *Cypraea tigris*.
Dorothy Germer	*Aequipecten*, World-wide bivalves, Worldwide gastropods, Central American miniatures, The Cobra Shells, *Busycon contrarium* egg to adult.
Leonardo & Severine Hernandez	Shells of S.E. Florida & Virgin Is.
Marian S. Hubbard	Shells bearing names of plants and animals.
Mart Hulswit	On the Career of Thomas Martyn.
Lina Jacobs	*Tridacna gigas*.
Charlotte Jensen	Framed arrangements of shells with sea life.
Dorothy Jensen	Shells of Little Peconic Bay, New York.
Nick Katsaras	Miniature *Conus*.
Karen T. Lamberton	Fossil and Recent shells and sea life.
Marion Moss	Art in shell flowers and in free form design.
Harold Muller	Marine shells with sea life.
Frank & Lee Nelson	Shells of the Puerto Rican Rain Forest.
William E. Old	World-wide Pectinidae.
George & Dorothy Raeihle	Florida marine fossils, Recent counterparts.
Sol Weiss	*Voluta musica*, color variations one locality.
Gilbert Williams	Shells from Okinawa, Viet Nam, Bay of Panama, Gulf of Calif. and story of their collecting.
Ethelyn Woodlock	Mitridae, Olividae, Muricidae -- world-wide. *Spondylus americanus*, *Conus gloriamaris woodblocki* Woodlocki.

Juniors:

Eileen Corring	World-wide marine shells.
John Coyle	World-wide marine shells.
Richard Righthand	Shells from Japanese Seas.
David Schirokauer	Japanese Shells.
Leslie Slocum	World-wide marine shells.

IN ADDITION there were oil paintings by Ethelyn Woodlock, pen and ink drawings and block prints by Leo Hernandez, a Christmas tree decorated with small shells, an octopus in alcohol, and a terrarium with live *Otala*. Large showy shells were displayed along the walls and down the center of the largest table. During the week there were four color slide presentations: George Raeihle, "Mollusks and their Environs; Bill Old, "Around the World with Sea Shells" and "Shelling on the Great Barrier Reef"; Dorothy Germer, "An Introduction to Shell Collecting" which showed to capacity houses.

REVIEW

THE COWRIE CURRENCIES OF WEST AFRICA, by Marion Johnson, Journal of African History, 1970, 11(1): 17-49; 11(3): 33-53, Birmingham, England.

This magnificent monograph is possibly the most authentic narrative covering the monetary use of cowries in West Africa. Marion Johnson is a Research Fellow at the University of Birmingham, and it is through the author's kindness that I received a copy of this monograph.

The cowrie species utilized as money were almost exclusively Cypraea moneta and C. annulus, Indian Ocean and East African species. This paper is based upon extensive research and includes many quotations from British, French, Dutch, Portuguese, and German sources. The author shows that although cowrie money at present no longer plays an important role, it served a valuable purpose for over a thousand years. "In no sense was it a primitive money, but a sophisticated form of currency capable of adaptation to the particular needs of West African trade." In fact, these shells are still used for small purchases in a number of West African markets, such as northeast Ghana and the Ivory Coast. The Maldive Islands, located in the Indian Ocean about 600 miles west of Ceylon, have always been the main source of supply for Cypraea moneta, and Zanzibar and its adjacent islands for C. annulus. I quote the author: "Arab travellers to the islands in the ninth and tenth centuries noted the collection of these shells by the use of rafts of coconut leaves, to which the living cowries attached themselves." In the fourteenth century cowries were being sold for monetary purposes in baskets of 12,000 and sacks of 100,000 units which were still in use in the last century. In the middle of the sixteenth century a certain De Barras wrote: "With these shells as ballast, many ships are laden for Bengal and Siam where they are used for money just as we use small metal coins for buying things of small value." Further he wrote: "And even to the Kingdom of Portugal, in some years, as much as two or three thousand quintals (a quintal comprised above 100,000 cowries) were brought by way of ballast; they were then exported to Guinea and the Kingdoms of Benin and Congo, where they were also used as money." After the Dutch occupied Ceylon, cowries began to appear in the Dutch market. Near the end of the eighteenth century they were still arriving in Rotterdam in baskets or bales of 12,000, for transshipment to West Africa or similar markets.

Around 1720 the total traffic was in the neighborhood of 400 million shells annually. This corresponds with the peak of the African slave trade, when some 20,000 such victims were being exported from Africa each year. Their price was about 180 lbs. of cowries per head, with roughly one-third of that amount being paid in actual shells. In the next three-quarters of a century -- especially after 1806 when the British abolished slavery -- the shell trade gradually withered. It revived again with the development of the trade in palm oil, so that between 1851 and 1869 it amounted to about 750 million shells a year, or more than 14 billion shells in nineteen years. Then the bubble burst, possibly in part because of the competition from other vegetable oils. Shell shipments gradually faded

to a trickle. In 1904 importation of the shells into West Africa was forbidden.

The value of the cowrie shells fluctuated considerably. From 1674 to 1695 they brought about 3 to 5 pounds per hundredweight in London; in 1698 the value rose to above 14 pounds and then sank to 2 pounds in 1831 in Niger. In 1849 it again brought 5 to 6 pounds in London, but its value today is about a shilling for 1,000 to 4,000 shells. This compares not unfavorably with the fluctuation of gold which was selling for $20 an ounce between 1873 and 1934 and now is more than $100. Who knows where it will be in the future?

W. S. MURPHY

FROM THE MINUTES OF THE MAY MEETING

Recaps of the April social meeting in Astoria and the Club's exhibit of shells in the Bergen Community Museum at Paramus, New Jersey, revealed that among favorable results in general, both were financially profitable. This happened by plan only in the case of the first. The unexpected and substantial income from the exhibit was generated by the sale of shells donated by members, the American Museum, the Fort Lauderdale (Florida) Shell Club, and others. The volume of this material was surprisingly large, and the fervor of the buying public was amazing. Dorothy Germer, head of the Exhibit Committee, reported that the event had proved to have strong appeal. She had received a number of favorable comments in writing, and more than two weeks after the show ended was still getting appreciative phone calls. There were many requests for an encore.

It was decided to hold the annual field trip as usual at Orient Beach State Park on the northeastern tip of Long Island. The date is Saturday, June 9, low tide at noon.

The first presentation was a showing of slides by Ken Sanger, who had photographed shells in his collection using much variety in camera angle, lighting, color filtration and framing. He had also experimented with backgrounds, the one used most frequently being a glossy, gold paper foil. The genera that appeared most prominently in this handsome series of photos were _Murex_, _Conus_, _Tonna_, _Turbo_, _Harpa_, _Cypraea_, _Voluta_, and _Mitra_. Ken noted in passing that he had learned of the existence of the Club in a restaurant -- when he happened to overhear a conversation between Bill Old and Daniel Boust.

Bill Old was the main speaker of the day. He described his visits, on a research mission during the summer of 1972, to museums in London, Brussels, Amsterdam, Frankfort and Berlin. He showed slide photos of the cities and the museums as a setting for his pictures of some of the more notable shells he saw which included types and extremely rare species. In Amsterdam his host and escort was Dr. Henry Coomans, known to many members from his years at the American Museum. Among their stops was one to view the house in which Linnaeus lived from 1743 to 1753 while working as a botanist in that city.

MILTON WERNER

SHELL COLLECTING NOTES

Earl H. Reed, Senior Curator
Springfield Museum of Science, Springfield, Mass. 01103

II. Cataloguing and Labelling

Once the collection outgrows the "knick-knack shelf" stage, a catalogue system becomes a necessity. The longer it is put off, the more difficult it will be to catch up, and important data may be lost. The basic information consists of an accession catalogue in which each new "lot" is entered consecutively. (A "lot" is one or more shells collected in one place at one time.) Each lot is numbered and this number appears in the catalogue and accompanies the specimens. In the catalogue may be entered the scientific name, the locality where collected, the date and collector's name, and, if desired, the date received, or any other data of interest. The lot number is best written on the shells, in india ink, in an inconspicuous spot, or, if the shells are too small, on a slip of stiff paper which is put into a vial with the shells. Thus, if the specimens become mixed or mislaid, the number allows quick identification.

A systematic catalogue of the collection is really not a necessity, and some experts feel that it is a waste of valuable time. However, if time is available, it can be useful in many ways. Either file cards or looseleaf sheets are used, and species are arranged systematically by family, genus and species. Obviously, this sort of listing will have to be rewritten as the collection grows.(*) It is useful in comparing notes with other collectors, in exchanging (especially if it contains marginal notes regarding duplicate material), in comparing included species with the numbers known to exist in a given family or geographic area, and in assessing the growth of the collection over the years. One other possibility is a geographic catalogue, listing species systematically by faunal areas. (The Western Atlantic, Eastern Pacific, or more limited areas -- West Florida, Puget Sound, etc.) This would be of interest, and worthwhile, only if the collection were of fairly substantial size and scope. As with other types of listing, it is only supplemental information and does not take the place of an accession catalogue.

Although the accession catalogue number will identify each lot, it would be quite inconvenient to look up every lot in this manner. Therefore, a label is usually made to accompany each lot in the collection. This would carry the lot number, name of species, locality, collector's name and date collected. The label should be rather small, so as to fit conveniently into most storage trays or vials, etc. Many advanced collectors order printed labels, but a more economical means is to have a rubber stamp made to order, carrying, perhaps, the wording "Collection of ----------", "Lot No. ---", "Species -----", and "Locality ------". In practice, the species name and locality data vary so much in length that it may be preferable to merely stamp at the top the words "Collection of --------" and "Lot No. ---" and fill in the remainder by hand, although this is a matter of choice. Label form and size vary greatly between various collectors and museums. Usually the label is made to fit into the smallest normally used tray. A size of 1 3/8" by 2 1/8" or multiple thereof is economical, as it may be cut without waste

from a standard 8½" by 11" bond typewriter sheet.

(*) In this connection, refer to NYSC NOTES, February 1971, No. 169, pp. 2-3.

EDITOR'S NOTE: This can never be too strongly stressed: A shell collection without honest and reliable data is worthless, a candidate sooner or later for disposal in a rubbish can. This refers to all shells, whether self-collected, exchanged for, or bought.

MKJ

ARTICLE OF THE MONTH

"Active metabolism associated with feeding in the mussel *Mytilus edulis* L." is the title of an article by Thompson, R. J. and B. L. Bayne in Journ. Exp. Mar. Biol. Ecol. 9: 111-124, June 1972. The mussel responds to a food stimulus by increasing the rates of ventilation, filtration and oxygen consumption above routine values. Activity results whether food is particulate (algal suspensions) or non-particulate (soluble extracts of algae). Inert particles of activated charcoal elicit responses indicating that the receptor system is both mechano and chemo sensory. An increased oxygen requirement results from the presence of food in the gut.

HENRY D. RUSSELL

A NEWSMAN SUGGESTS

NYSC member Ernest Walton calls our attention to a front page article of the Wall Street Journal of April 2, 1973. It is called "Food for Thought: Whelks, Periwinkles or Mahogany Quahogs." The writer advocates that in these times of upward cycling meat prices, we Americans turn out dietary attention to such "trash" fish as puffers, bergalls, small sharks, skates -- whose wings properly prepared are delicious -- and, in the South, the gafftop catfish. In addition we should supplement such diets with one of our most abundant and most neglected sources of marine proteins, the ordinary Blue Mussel, *Mytilus edulis*, a much sought after delicacy in France. There are other mollusks we similarly neglect: Periwinkles, *Littorina littorea*, and for that matter any decent sized gastropod, bivalve, or cephalopod we can obtain. The article closes with an elaborate receipe for mussels with white wine. As our correspondent notes: "Never thought I'd see *Littorina littorea* make the front page of the Wall Street Journal!"

MKJ

("Puffer" can refer to any inflatable fish as well as to the walleyed pike. Our local puffer is *Sphoeroides maculatus*. It is common, spineless, and popularly called "blowfish." It is the "sea-squab" of market and restaurant. Both flavor and texture are excellent.

Blue mussels are delicious. Those which have attached to areas above the bottom are generally free of sand. Gourmet sauces, yes, but enjoy them also simply with butter and/or lemon and/or catsup.

"Any decent sized gastropod." Avoid the undigestible radula.

"Mahogany Quahog" = *Arctica islandica* L.) DR

ON SPAWNING PERIODS OF LOCAL MOLLUSKS

Dorothy Raeihle

The following notes are incomplete in that the dates are those on which egg masses have been found and do not necessarily represent the earliest and latest dates of spawning periods. We would be very happy to hear of dates on which you have found viable egg masses in local waters, of these and any other species of mollusk.

Polinices sp. May 5, 1972, Rockaway, N. Y. M. K. Jacobson reported an unusually large number of sand collars on the ocean beach.

Lunatia heros (Say) May 12, 1973, Center Island Beach, N. Y., on Long Island Sound: In a tide pool a section of sand collar with eggs that appeared freshly deposited. July 4, 1956, Jones Beach, N. Y.: Numerous viable sand collars at water's edge, ocean beach.

Giglioli (1954) reported that heros sand collars are found in Canadian waters June to August.

Ilyanassa obsoleta Say May (5) 1972, Jones Beach State Channel, N. Y.: On May 13, 1972, egg capsules were collected from the low intertidal zone; water temperature in the cove was in mid 50°'s F. The eggs were permitted to develop and hatch at room temperature. The timing indicated that they were deposited the first week in May. May 12, 1973, Center Island Beach, L. I. Sound: Thick clusters of egg capsules on seaweeds; all the eggs appeared in very early stages. Nov. 23, 1969, Peconic Bay, N. Y.: Viable cases.

Bousfield (1960) writes of this species that in Canadian Atlantic waters they spawn in early summer when temperatures are near 68°F. In New England Scheltema (1962) infers that the height of the breeding season is June and July; Jenner (1959) noted the "aggregation at the end of the breeding season (July, August)."

Nassarius trivittatus (Say) May 12, 1973, Center Island Beach, Long Island Sound: Egg capsules thickly clustered on fronds of seaweeds; all the eggs appeared in very early stages of development.

Bousfield (1960) observed that trivittatus spawns in late spring and early summer when surface temperatures first reach 60° F. Arthur S. Merrill reported that Bureau of Commercial Fisheries research vessels dredged viable capsules mid-May, 1965, off Virginia from waters with temperatures of 45.6° to 48.2°F. The trivittatus capsules were attached to viable sand collars of Lunatia heros at 18 fathoms.

Urosalpinx cinerea (Say) June 9, 1973, Orient Beach, Long Beach Bay, N. Y.: Capsules with embryos well along in development, shells formed. Viable capsules commonly found in this area in June. August 29, 1970, Acobomack at Gardiner's Bay, N.Y.: Viable case, hatched September 1.

Bousfield (1960) reports that in Canadian Atlantic waters they spawn in early summer when temperatures are near 68°. Fretter and Graham note that the species has become established off Essex coasts (S.E. England) and there this "American whelk-tingle" breeds in spring and summer.

Eupleura caudata (Say) June 9, 1973, Orient Beach, Long Beach Bay,

N. Y.: Eggs appeared in very early stage of development.

Crepidula fornicata (Linné) May 12, 1973, Center Island Beach, Long Island Sound: Female brooding large cluster of egg capsules, the eggs appeared newly deposited.

Bousfield (1960) names late spring and early summer as the spawning season, when temperature at the surface first reaches 60°. Fretter and Graham (1962) note that *C. fornicata* breeds at Essex, England, April - October.

Anachis translirata Ravenel Collected June 10, 1972, Orient Beach, Gardiner's Bay: Specimens deposited eggs in captivity mid-June through July.

Anachis avara (Say) On June 8, 1973, egg cases were discovered on the sidewall of the aquarium after several months of no deposits.

Haminoea solitaria Say Jones Beach State Channel and eastward in bays of Long Island: Viable egg masses have been found as early as June 14th and still in large numbers September 18th. Date of breeding season seems to vary year to year, presence of a few capsules October 13 may have been a freak occurrence (?).

Mytilus edulis Linné, May 12, 1973, Center Island Beach, Long Island Sound: Few specimens collected, some with ripening roe. Although "Engle and Loosanoff found that in Connecticut waters spawning begins when the temperature approaches 60°F, the period of attachment extending from early June to the end of August", we have found minute mussel spat, around ½ mm, at Rockaway Beach in January (See NYSC NOTES 132:5).

EXTRA-LIMITAL: Beginning around the first of May, 1973, the two southern *Nassarius albus* (Say) in the aquarium, which had made but scattered deposits all winter, began to deposit freely -- almost 100 egg capsules in a period of about three weeks.

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NYSC NOTES   NUMBER 194   SEPTEMBER 1973

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, OCTOBER 14th, 1973, at 2:00 PM

PROGRAM: MICROMELO UNDATA -- THE SEARCH FOR AND STUDY OF A BEAUTIFUL ANIMAL by Mart Hulswit

IN FLORIDA LAST SUMMER . . .
by Leonardo Hernandez

SHELL-OF-THE-MONTH

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NYSC EXCURSION TO AQUARIUM OCT. 27

At the invitation of Dr. James Oliver, Director, New York Shell Club members will be guests of the New York City Aquarium on Saturday, October 27th, 1973.

The aquarium is located at Surf Avenue and West 8th Street, Coney Island. There is an ample parking lot (fee $1.00 per car). For those using public transportation, the most convenient is the "F" train of the Independent Line, exit from "WEST 8th STREET" stop directly to the aquarium area.

Members will assemble at 10:30 AM in the walkway area near the entrance to the aquarium. Have your membership card or NYSC name badge with you for identification at parking lot and aquarium.-- especially useful if you are a few minutes late. There is a lunch room, also picnic tables. There is a gift shop. In late October the weather should be perfect, the area uncrowded. Come and enjoy the day!

Dorothy Raeihle, Pres.

NYSC ROSTER

The accompanying roster of the New York Shell Club, dated August 15, 1973, is the first complete roster we have issued since that of January, 1969. Our many thanks are due to Helene Avellanet for the typing and to George Raeihle for the subsequent work. As the names were taken from the Addressograph plates, it is possible that we have missed listing some family memberships. If so we apologize, and will be pleased to mention omitted members of a family in our next issue.

We plan to continue with the semi-annual "Supplement to Roster." Meanwhile, please note the eight additions and one change -- page 7.

SHELL COLLECTING NOTES

Earl H. Reed, Senior Curator
Springfield Museum of Science, Springfield, Mass. 01103

III. IDENTIFICATION

Identification of specimens is probably both the most fascinating and most frustrating facet of collecting. It is the subject which usually stumps the beginner, and which provides the more advanced collector with endless sources of discussion and varieties of opinion. The amateur, quite logically, expects and hopes that all of his specimens can be given a name, unequivocally and accurately. Unfortunately, this is not always possible. Almost every new shell book contains "name changes", some the result of previous error, some the result of scientific progress, some the reflection of that particular author's views.

Taxonomy, which is the science dealing with nomenclature and classification of living things, has evolved over the years. At the base is the distinguishing and naming of different "kinds" or species, the so-called "alpha level" of taxonomy. The next step is the grouping together of similar kinds into various superspecific categories: genera, families, superfamilies, etc. This may be done on purely morphological factors, i.e., comparison of form and structure, or on phylogenetic factors, i.e., supposed relationship in the evolutionary process, or, in many cases, on a mixture of the two. It is here that much divergence of opinion may be expected, and this "classification" of living things is sometimes referred to as "beta taxonomy". The third phase, "gamma taxonomy", is largely a study of "populations", of ecological variations and/or genetic variations, in other words, the actual process of evolution itself. This has resulted in the concept of "subspecies" and of a host of "varieties" and "forms", both ecotypic (related to environmental factors) and phenotypic (related to genetic factors).

"Splitters" and "lumpers" are not a modern phenomenon, but, within the above framework, their activities have resulted, in some cases, in nomenclatural chaos. The "splitter", with advancing knowledge, recognizes increasingly finer divisions, makes extensive use of subgenera, and invents new terms (superspecies, prospecies, infrasubspecies, etc.) to define these differences, in the process doing violence to the basic taxonomic concepts. (ED. NOTE: The International Code recognizes no category lower than a subspecies.) The "lumper", while recognizing that such variations exist, wishes to avoid their introduction into formal nomenclature, and to leave their consideration to the specialists. In the midst of such controversy, it is well to realize that neither view is either all right or all wrong and that, in fact, there is usually little disagreement as to facts: No two living things are precisely alike; variations, minor and major, do exist, and are induced by a multitude of factors. It is in the interpretation of these variations, and, especially, their position within the framework of zoological nomenclature, that differences of opinion exist.

Meanwhile, the amateur collector may go blissfully on, labelling his specimens, largely unaware of such controversy. Annoyingly, his books do not all agree on names, but, in general, if he uses the

names in more recent books, he will usually be correct, at least for the time being.

Names are changed for a number of reasons, which may be categorized as follows:

(1) Priority. The earliest validly introduced name should be accepted. Thus, if an earlier name for a species is recognized, other later names become synonyms and disappear from most books and check lists.

(2) Splitting. A new species is discovered, or an accepted species is found to consist of two separable forms, and a new name is introduced for one of them.

(3) Lumping. Two or more accepted "species" are found to be merely forms of a single variable species, and one name necessarily becomes a synonym, and is deleted.

(4) Reclassification. A species is found to have been placed in the wrong genus, or even the wrong family, or to be so distinct biologically as to require a genus of its own. The species name remains, but in a different combination.

There are other variations, but most name changes involve one of the above situations and are defensible. It is in the excessive proliferation of subgenera and subspecies that abuses have taken place -- abuses, that is, from the standpoint of a sound, stable taxonomy, usable by the biologist or ecologist, as opposed to the narrowly specialized worker.

All of the foregoing, of course, does not spell out how to identify specimens. There is no magic formula to make this process easy, unless it is that of study, hard work, and experience. First should come efforts using one's own resources. Descriptions and illustrations in available books should be studied and compared. Soon a general knowledge of the more common families and genera will be acquired. Then the specific "field marks" or identifying characters for species should be compared, keeping in mind that, in some families, species differences are slight. Given a reasonable number of books and a little experience, a good percentage of most collections can be identified without great difficulty. Next, comparison of puzzling specimens with either a nearby museum collection or a large private collection may resolve a few more problems and reduce the unidentified segment of the collection. Then a visit to a more advanced collector, or contacts at shell club meetings may provide additional assistance. Within reason, most advanced amateurs are quite willing to help and advise the beginner. Reference should constantly be made to books, however, and it is unwise (and unfair) to rely interminably on someone else's knowledge.

Finally, as a sort of "court of last resort", assistance may be requested from the professionals. Most museum and university professionals are kindly disposed toward the amateur and willing, within certain limitations, to help the beginner. Remember, however, that more important duties take up most of their time, and privileges granted should not be abused. To ask for help in identifying one or two specimens, with good locality data, is one thing. To expect identification of a cartonful of assorted, unlabelled, data-less shells is quite something else. Also, to expect an immediate, off-

the-cuff, identification of anything but the most common species is unreasonable. Even the "experts" cannot carry in their heads the thousands of names given to mollusks. In addition, their reputation is "on the line" in any identification, and they would (or should) want to check carefully before giving an opinion. After all sources have been exhausted, it is no disgrace to end up with a few unidentified specimens. Even the greatest museums have some such in their collections.

In identification, the use of "popular" names is sometimes discussed or suggested. There are, it is true, some valid "popular" names, but their use is almost always confined to a local area, or current among certain groups of collectors. The task of inventing "popular" names for all of the other thousands of species would be a futile gesture, especially when it is just as easy to master the scientific names of most of them.

Most books have quoted the total number of named species of mollusks at from 80,000 to 100,000. However, a recent study indicates that the figure should be substantially less; perhaps nearer 50,000. In any case, there are a sufficient number so that identification is a never-ending occupation.

AMU MEETS IN DELAWARE

The New York Shell Club was well represented at the 39th meeting of the American Malacological Union, held June 25-28 at the Newark campus of the University of Delaware. We found a complex of modern facilities in a park-like setting. The main building, Clayton Hall, was designed as a conference center and housed the auditorium, council rooms, banquet hall, and the information center which was located at one end of the very spacious and comfortable lounge. President Dee S. Dundee, Host Chairman R. Tucker Abbott and his aide Russell Jensen are to be congratulated on a well arranged, interesting, and well conducted meeting which drew about 220 delegates.

The papers covered a wide range of subjects and included several on the effects of man's alteration of the environment: Dr. Ruth D. Turner's "In the Path of a Warm Effluent" described changes in the Oyster Creek/Forked River complex above Barnegat, New Jersey, resulting from the warm water effluents from a nuclear power plant -- shipworms are now found in previously uncontaminated boatyards; Dr. W. N. Harman spoke on the "Effects of Reservoirs and Canalization on the Mollusca of the Upper Delaware Watershed" -- wherein much life was destroyed; Dr. Meredith Jones added a strong warning against a sea level canal to his presentation "Gatun Lake as a Freshwater Barrier in the Panama Canal." The Symposium "What is a species? a subspecies?" brought forth some interesting discussions, followed by Dr. Henry van der Schalie's remark that Lake Erie is not really a lake but the flare of a river, and his suggestion that stunted specimens be transferred to the good part of the lake to determine whether the stunting is genetic or environmental. On another day Dr. van der Schalie presented a paper co-authored by Dr. Elmer Berry: "The Effects of Temperature on Growth and Reproduction of Aquatic Snails." We later learned that this most interesting 15-minute presentation was but a sample of a very significant report, published June 1973,

and comprising the whole 91 pages of the special 50th issue of STERKIANA. (The report is of studies of Lymnaea, Helisoma, Physa, and Amnicola.)

John duPont addressed the delegates and made us welcome on our visit to the Delaware Museum, where two fine undersea films were shown. We studied the exhibits, and had a behind-the-scenes tour. Lunch was at the Winterthur Gardens, where a few lingered before returning to the Museum for the afternoon presentations. We learned that the Delaware Museum has generously donated the use of a room for a long-needed library for the AMU, where members may visit and consult the literature which is yet to be assembled there.

The field trip to Cape Henlopen included a tour of the Marine Laboratory at Lewes, where we saw oyster spat in various stages of early growth. Outside, in the shade under the pier, the bottom was literally carpeted with Ilyanassa obsoleta, with their egg cases on every solid bit of substrate including a tin can which was completely coated. Cape Henlopen juts northeastward toward Cape May and forms the southwestern boundary between Delaware Bay and the Atlantic Ocean. Thus there were two beaches to visit. The ocean beach yielded little; the extensive flats on the bay would take more than one low tide to investigate, but the species represented in occasional tide pools did not differ generally from that of our New York area. A few energetic shellers ranged far afield; their take included many dead horseshoe crabs, a few Busycon carica, and some assorted bivalves.

At the banquet the filet was tender and the company good. Dr. Dee Dundee gave us a report on "The State of the Union" (AMU); a film "Take Two from the Sea" was shown through the courtesy of Dr. Arthur Merrill. The gavel was passed to Dr. Harold Murray, succeeding to the presidency, who will preside at the 1974 meeting in Massachusetts. (See NOTES below.)

D. Raeihle

BRIEF NOTES

* The American Malacological Union (AMU) will hold its 1974 convention in Springfield, Massachusetts. President Harold D. Murray of Trinity University, San Antonio, Texas informs me that the dates will be August 5-8. The Springfield Museum of Science and the Connecticut Valley Shell Club will host the meeting. Fortunately Springfield is so near New York that many of our Club members will be able to attend.

* Neither Lt. Col. Corinne E. Edwards (USAF, Ret.) nor Thomas C. (Tom) Rice (OF SEA AND SHORE Magazine) are associated in any manner with George Hudson nor with any of his various enterprises under various names such as "Seashells 'Round the World," "The Cayman Islands Information Center," etc. operating from 17150 NE 10th Avenue, North Miami Beach, Florida 33162.

* Dr. Akilu Lemma of Haile Selassie I University in Ethiopia writes in an article in "Naval Research" for June 1973 that the Endod plant Phytolacca dodecandra, also known as pokeweed and soapberry, has been found to be an excellent control of the "number one parasitic disease" of man, snail fever or schistosomiasis. It is a superior

molluscicide, thus breaking the life cycle of the parasite by destroying the snails which serve it as intermediate hosts. It also kills, even in slight concentration, the schistosome parasite in its larval stage, as well as harmful land and water leeches. The most encouraging aspect of this plant is that it is native in many areas where schistosomiasis is endemic, thus eliminating the need to spend hard-to-come-by money to import foreign chemical controls. Though the juice of the Endod seems at present to have no harmful effects on the environment, the author of the article wisely calls for further studies to "determine the short- and long-range ecological effects of continuous application on the flora and fauna of the treated bodies of water." The Editor is grateful to Dr. Ruth D. Turner of the Museum of Comparative Zoology who presented him with a xerox copy of this important article.

MKJ

* A tiny fossil clam is creating much interest in scientific circles. Judged to be early Cambrian (540-570 million years), it has no teeth, but the shell bears characteristic muscle scars that "fingerprint" the 1/8"-1/4" fossil as being a clam. Discovered January 14, 1973 among rocks collected near Schodack Landing, 10 miles south of Albany, New York, it is being studied by its finders - Dr. John Pojeta, Jr., a U.S. Geological Survey paleontologist, and Dr. Bruce Runnegar of Australia who was then working at the Smithsonian - and their colleague Jiri Kriz from the Czechoslovak Geological Survey. It has been named _Fordilla troyensis_, and Dr. Pojeta notes that "it appears to be a 'missing link' between some extinct forms of mollusks and the 20,000 species of clams living to-day." (see SCIENCE of May 25, 1973; UST/June 1973)

Don Kuntz

BOOK REVIEW:

THE CURIOUS MOLLUSKS

by Marie W. Jenkins, Madison College, Harrisonburg, Virginia, 224 pages, illustrated. Holiday House, New York, $5.95, copyright 1972.

The book is replete with excellent black and white photographs and drawings. It complements shell field guides in that it describes the live animal, where and how it lives, and gives common and scientific names of each mollusk listed in the book. It also tells how to conduct experiments with live mollusks. My greatest criticism is that the photographs are not in color.

In this reviewer's opinion it is an excellect book for anyone interested in shells and a "must" for the beginner since, when Karl Jacobson gives one of his lectures on shells, you will know what he is talking about after reading this book. It tells about each class of mollusks and there is an article by Dr. Henning Lemche describing how he discovered _Neopolina_ which they call a living fossil.

The book has a fine index, bibliography, and suggests books for additional reading. To give an example of the text, the following is quoted from the chapter on air-breathing snails:

"On our eastern coast the most common animal in such marshy areas is the salt-marsh snail (_Melampus bidentatus_), a half-inch long creature with a muddy, cone-shaped spiral shell. Across its foot sole is a deep groove, and as the animal crawls about on the marsh plants

it hitches itself along, sliding the front end of the foot forward, then pulling up the rear. When the tide rises the snails climb to the grasstops and hang, spattered by spray or sometimes covered by water, until the tide starts its slow flow back to the sea again.

"These salt-marsh mollusks belong to a great group of snails known as pulmonates, or snails with lungs. The gills are lost, and the edges of the mantle cavity are grown to the body except for a small opening on the right side called the breathing pore. Air goes into the cavity through the pore and oxygen is picked up by blood in the tissues nearby. Many pulmonates live far from the ocean, sometimes hundreds of miles, but a few such as the salt-marsh snails must stay near shore so their eggs can be laid in the sea.

"Air-breathing snails, like the opisthobranchs, have an ovotestis and are bisexual. The gonopores, or openings that the sperm and eggs pass through, are on the right side of the head, near the tentacle. Most kinds of pulmonates are found on land but snails in several families live in fresh water. These snails are different in several ways from the ones that stay on land. All of them have shells and all have one pair of tentacles, with their eyes at the bases of the tentacles." .... "Snails of the land...may or may not have shells, but all of them have two pairs of tentacles with eyes at the tip of the back pair."

-- Anne Hunter

Members attending the June and September meetings were able to examine this book which is found mostly in libraries rather than bookstores. The publisher has offered the New York Shell Club a substantial discount on a bulk order. Members wishing to participate should at the earliest opportunity mail their check in the amount of $4.25, payable to the New York Shell Club, to Frank J. Nelson, 95-24 110th Street, Richmond Hill, New York 11419. No orders will be taken after October 14th. The books will be brought to the first meeting following delivery to Mr. Nelson by the publisher.

MORE ON SWIMMING NATICIDS

From Constance Boone of Houston: "While I have not yet seen Polinices duplicatus swimming during our daytime collecting, I did observe last spring (1972) in Panama at Venado Island by coleman lantern at night in tide pools that Natica unifasciata Lamarck, 1822, was continually found suspended in the pools. The large animals were completely extended and seemed to be floating. I think that I thought then that the movement was due to receding tide, but the pools were somewhat stable at that period. I now believe that this species was swimming."

WELCOME TO NEW MEMBERS: Arthur Maneki, 249 E. 27th St., N.Y.C. 10021
Philip Orlando, 201 W. 85th St., N.Y.C, N.Y. 10024
Howard Morris, 144-37 37th Ave., Flushing, N.Y. 11354
Mrs. Estelle Morales, 104-20 Queens Blvd., Forest Hills, N.Y. 11375
Miss Cathy Casey, 2192 McClellan St., East Meadow, N.Y. 11554
Miss Julia Thieriot, Box 385, Locust Valley, N.Y. 11560
Chauncey V. McKnight, 486 West St., Fort Lee, N.J. 07024
George A. Quallins, 30-05 High St., Fairlawn, N.J. 07410

NEW ADDRESS: Mr. & Mrs. H. Gaughran, 7 Pulaski Rd., East Northport, N.Y. 11731

NYSC NOTES NUMBER 195 OCTOBER 1973

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These NOTES are distributed by mail to all members of the NEW YORK SHELL CLUB, Inc. Dues: Full membership $4.00 per year, $1.50 additional for each of other members of the same family -- with one copy of NOTES per family. Corresponding membership $2.50 per year. A limited number of back issues of the NOTES are available at $.30 postpaid per single copy; also bulk rates. Items and articles for publication in the NOTES should be sent to the Editor. The Corresponding Secretary should be notified promptly of any change in your address.

The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, NOVEMBER 11, 1973, at 2:00 PM

PROGRAM: TO INDONESIA LAST SUMMER (with color slides)
by Myra Chaplin

ON THE TRAIL OF CHARLES WRIGHT
by M. K. Jacobson

SHELL-OF-THE-MONTH
by Joseph Bao

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ARTICLE OF THE MONTH

In an article entitled, "Tide-model analysis of the zonation of intertidal prosobranchs. 1. Four species of *Littorina* (L.)", A. J. Underwood in Journ. Exp. Mar. Biol. Ecol. *9*: 239-255, Sept. 1972, shows the position taken by these four littorinas in a laboratory tidal basin model. *L. neritoides* (L.) and *L. saxitilis* (Olivi) showed the same zonation relation to the tidal cycle as at the shore at Plymouth, England (above the level of high water and remained inactive). *L. littoralis* (L.) clustered on fucoid algae if present, otherwise showed the same as at the shore. *L. littorea* (L.) adopted a pattern of zonation just below high tide level, but higher than normally observed at the shore.

Henry D. Russell

NOTICE: It was unanimously voted at the October 14, 1973 meeting to invite Mr. and Mrs. Anthony D'Attilio, charter members of the New York Shell Club, to attend the twenty-fifth anniversary celebration of the Club early next year, as guests of the Club.

SCANNING THE COAST AT BIARRITZ

by Monique Caubere

Last spring during the latter half of April I was in France visiting with the family. We stayed in Biarritz, a large tourist town on the southwest Atlantic coast about twenty miles from the Spanish border. Part of Biarritz's popularity as a resort stems from the luxurious hotels and fine shops, but one cannot overlook the pale beaches and sculpted cliffs composed of eroded blue marl and sandstone conglomerate.

I had the good fortune of being there during the last week of the great tides. These occur twice a year, and expose vast rocky areas and entrances to the sea caves at the base of the cliffs. Gathering up my camera, a few plastic bags and a knife, I descended the many stairs leading to La Plage des Basques (The beach of the Basques) in hope of finding shells. The first thing I noticed was the absence of a noticeable tide line. There were no shell fragments, driftwood, sea weed or other debris on the beach. The sand was greyish tan, fine grained and firm especially where covered with water. Parts were of tightly compressed mud from the blue marl of the cliffs. I knew that there was much erosion caused by sea and rain, but there were no sand bars nor deep channels. The beach seemed to taper gradually without any sudden drops, but I didn't wander out very far because of the powerful undertow and cold water.

The tide pools containing the most life were about two miles south of the stairs. I walked along the beach now wide on account of the low tide. I then checked the time knowing most of the beach would be submerged and that great waves, often over two meters high, would be crashing against the cliffs at high tide.

There were several other people wandering in the pools hunting for mussels, sea worms, octopus and rose shrimp. I asked about shells but was told there were very few.

The water in the pools was quite clear. The bottom was covered with large rounded rocks and coarse grained sand. Green sea lettuce grew on the rocks near shore then stopped abruptly. There was no kelp or other large sea weeds, only dense clusters of brown and pink algae resembling lacework. The exposed rocks were sharp and slippery. Shoes were necessary. I sat on the rocks and looked closely into the pools. There were many small crabs, at least three different species, black and green sea urchins, one species of sea anemone, minnow-type fish, and bottom dwellers whose front fins served as feet. There were great quantities of limpets, mussels and small top shells but not much else. All at once I sensed something crawling over my feet. I was astonished to see many rose shrimp crawling and feeding. I felt no pain -- only a faint tickling sensation. There were about thirty of the small, transparent creatures, the smallest being about three quarters of an inch, the largest about two inches. These are excellent eating but I didn't attempt to force them into the bag. I turned over many rocks but these only yielded frantic fish and outraged shrimp, nothing else.

The area around Biarritz does not support a large variety of molluscan life. There is however a great abundance of a few species. Among the most common are *Mytilus edulis*, *Patella vulgata*, *Patella intermedia*, and *Gibbula umbilicalis*. These are found clinging to rocks and crevices in the intertidal zone. Other shells, though less common, were *Pholas dactylus* which could not be collected without breaking the valves, *Purpura haemastoma*, *Trivia monacha*, *Gryphaea edulis*, and *Gryphaea angulata*. Therewas also an unidentified drill occupied by a hermit crab. The lack of shells is due in part to the cold water and marl mud but more important is the violent nature of the waves, current, and the tide. Most specimens found in the intertidal zone appear to have been dead-collected. They often have worn spires and faded colors.

The only area which contains many shells is the cove of the Vieux Port (Old Port). Here there are fewer large waves and the pools are more protected. While sifting through the coarse sand I came upon a large quantity of small shells. These have not yet been identified but some seem to be muricids, arcas, patellas, tegulas, *Phasianella*, *Tricolia*, Cerithidae and *Polinices* (about twenty-two species in all)

From one of the local lobster fishermen I was able to obtain several dredged specimens. These were *Pecten maximus*, *Cymatium nodifera*, *Cardium tuberculatum*, and *Astralium rugosum*. These shells were in good condition in contrast to those found in the intertidal zone.

The fish market turned out to be the best shelling locale, though most of the shells did not come from the immediate area. These included *Mytilus edulis*, *Tapes pullastra*, *T. descussatus*, and *T. descussatus fuscus*, *Pecten maximus*, *Venus verrucosa*, *Cythera chione*, *Pectunculus violascens*, *Cardium edulis*, and many different species of oysters from all over the world.

After having little success on the beach I went to the museum to find out what I could on the area. The director said he knew very little about local mollusks, the reason being there were so few. The museum library had no books on the living marine molluks of the region though there were several on the land snails.

Just outside the museum I came upon a large group of land snails crawling over rocks or hiding under some low, thick bushes where it was cool and damp. There were many snails together both alive and dead. There were *Helix aspersa*, *Cyclostoma elegans*, *Helicella variabilis* and *Cochicella acuta*. *Helix aspersa* was the only snail who came out of its shell. It crawled over my hand feeling its way with its antennae and left a trail of clear sticky slime.

All in all I was disappointed with my findings. More favorable weather, greater patience and night collecting might have turned up a larger number of species. Though from all accounts, the statements of the museum director, local fishermen, personal observations and the lack of any written material, Biarritz, while far more beautiful, milder weathered and significantly less polluted than New York seems to have far fewer species of shells.

REVIEW. A FIELD GUIDE TO THE SHELLS OF THE ATLANTIC AND GULF COASTS AND THE WEST INDIES, by Percy Morris, edited by William J. Clench, Houghton Mifflin, 330 pp., 76 plates, 8 in color, hardbound $7.95, soft cover $4.95.

This is supposedly the third edition of Percy Morris's well known and handy little book first published in 1947. However, it turns out to be an almost completely rewritten and reorganized work. The descriptions have been reduced in length to their real essentials, many more species have been included (1035 in all) including many from the West Indies, and the number of pages and plates greatly increased. This reworking was most skillfully done by Dr. William J. Clench, Curator Emeritus of the Museum of Comparative Zoology of Harvard University. He has done a splendid job in what amounts to essentially a new book, rather than merely a new edition. It was therefore a surprise to this reviewer that Dr. Clench's name was not more prominently displayed. In a word, this is no longer only a Percy Morris book. Just as we have a Keep & Baily book of West Coast shells, and a Perry & Schwengel book of southern Florida shells, we now have a splendid Morris & Clench book for the East Coast. It is unfortunate that the publisher did not make this clearer.

The book is very useful. The descriptions are informative and the plates clear. The color plates are very beautiful. All the plates are bunched in the center of the book where they can be easily reached because the glazed paper gives this section an entirely different looking margin. Thus the reader is spared the frustrating hunt for a desired plate through page after page of text. It might have been better if the figures on each plate had also been numbered.

In brief this is a well bound, beautifully printed and illustrated and authoritative book which, at its comparatively low price, is easily one of the better buys in the market. There are, as in all such books, a number of minor errors which do not effect its usefulness to any degree.

Morris K. Jacobson

FROM THE MINUTES OF THE SEPTEMBER MEETING --

President Dorothy Raeihle opened the season's first meeting with a welcome, and the announcement that the Club has taken in 14 new members, regular and corresponding, since the June meeting. Bill Old mentioned a special exhibit of Strombus currently on display in the Museum, and noted that one specimen had been lent by member Willie Antonowitz. It was also noted, with regret, that the Antonowitzes have moved to North Carolina. Dorothy also announced that arrangements have been made for the Club to visit the New York City Aquarium on October 27th.

Karl Jacobson reported on the annual meeting of the Western Society of Malacologists, at Asilomar, California. Not surprisingly, this year's program did not include a field trip, because of the State's stringent law against intertidal collecting. Karl's showing of slides was followed by a series taken by Mrs. Raeihle at the AMU annual meet-

ing in Newark, Delaware. She noted that of the 220 in attendance, 10% were Club members - some corresponding, but more than half regular members.

The Shell-of-the-Month was Leucozonia nassa - specifically, one that had taken up residence in Dorothy Raeihle's home aquarium, and was observed, on a day eight years ago, to be depositing eggs. George Raeihle's camera recorded the act, and continued to record the progress of the progeny at various stages of their growth, to adulthood at one and a half years. Dorothy reminisced as the pictures were shown, closing with the observation that one of the females is still living.

The main speaker, member Monique Caubere, described a stay at her grandmother's home in Biarritz last April, and the collecting she did on this rocky coast. The results were represented by an attractive display of shells. Monique took a number of dramatic black-and-white pictures of storm waves crashing on the piles and pinnacles of rock. These were shown via an opaque projector. She also showed slide photos of tide pools, fish, rose shrimp, crabs, and shells. Following tradition, she ended her presentation with a sunset scene -- and a magnificent one it was.

Milton Werner
Recording Secretary

WE WELCOME THESE NEW MEMBERS:

Mrs. Sandra R. Glazebrook, P. O. Box 651, Marathon, Florida 33050

Dr. Jose C. Mendiola, c/o Cebu Valez General Hospital, Cebu City,
Philippines

Mrs. Virginia Swenson, 312 Grand Ave., Palisades Park, N. J. 07650

Mr. Frederic Weiss, 6 Plymouth Road, Great Neck, New York 11023

Mrs. Alice Bracco, 26 Madison Street, New York, New York 10038

Mr. Jack Foehrenbach, 91 Elm Street, Islip, New York 11751

CHANGES IN ADDRESS:

Mr. & Mrs. Leonardo Hernandez, 622 West 113th Street, N. Y., N.Y.10025

Dr. & Mrs. Harry G. Lee, c/o Hamilton Hadden, "Dogwood", Long Island
Expressway, Jericho, New York 11753

Dr. Edward T. La Roe, Office of Coastal Zone Management, National
Oceanic & Atmospheric Administration
11400 Rockville Pike, Rockville, Maryland 20852

Mrs. Nelson A. Garlinghouse, 17 Phillips St., Red Hook, N. Y. 12571

Mr. Florentin Maurrasse, Dept. Physical Sciences, Florida International University, Tamiami Trail,
Miami, Florida 33144

NOTE. A number of errors of fact were detected in the book "The Curious Mollusks" by Marie W. Jenkins which was reviewed in these pages last month. On page 57 the author states that the Bleeding Tooth, *Nerita peloronta* "has long tentacles with quite keen eyes on the tips and it can turn them in any direction. The snail can also protect its eyes by pulling them back in through the tentacles until they are under the skin of the head." But the photograph on page 56 shows that the eyes are at the bases of the tentacles and though they may be able to distinguish light from shadow, it is through the use of the sensitive tentacles exploring the substrate in its path that the snail gropes its way around its station. Moreover, marine prosobranchs cannot withdraw their eyes; this is a characteristic of land pulmonates only.

On page 83 it is stated that the Common Mud Snail, *Nassarius obsoleta* (sic) has two tentacles at the rear end of the foot. The fact is that this nassarid is the only western species of the genus that does NOT have this characteristic. This is one of the reasons that many malacologists put it into the genus *Ilyanassa*.

On page 87 the indication is that "chank shells are related to the olives." But the relationship is rather distant. Both are neogastropods, but the Chank (*Xancus*, *Turbinella*) is in superfamily Buccinacea, shells formed like a trumpet, which include *Busycon*, *Fasciolaria*, *Melongena*, etc., etc. The Olives (*Oliva*) are in the superfamily *Volutacea*, where the shells are rolled up cylindrically, like a Volute.

Dorothy Raeihle

DIRECTORIES OF COLLECTORS AND MALACOLOGISTS. The projects for two such publications have just come to our notice.

AMERICAN MALACOLOGISTS 1973-74. Editor-in-Chief, R. Tucker Abbott, Managing Editor, Miss M. E. Young. "A national register of living professional and amateur conchologists, *plus* biographies of 500 great, as well as little-known, American malacologists of the past." Published at 6314 Waterway Drive, Falls Church, Virginia 22044. Price till Dec. 1, 1973 \$10.00, for biographees \$8.75. Price after December 1, \$12.50.

WHO'S WHAT, THE COLLECTOR'S DIRECTORY. "(This) is the first time in the world that such an important directory has ever been published, having in fact, a classification by themes of collections... 17,000 collections and almost 1,000 associations are already in the repertory. This directory will be *general* (all themes of collections being admitted), *selective* (will be mentioned in at only the collectors having expressed the desire to figure on the list), and *international* (30 countries represented)... bilingual French-English (with content translated in 10 languages)." No publication date indicated. If interested contact Jean-Claude Baudot, director, 7 rue Greffuthe, 75008 Paris, France.

MKJ

POSSIBLE SHEDDING OF THE PENIS BY LITTORINA SAXATILIS (Olivi, 1792).

The usual method of sex determination in Littorinidae seems to have been to accept the presence or absence of a penis as indicating the sex of the animal. However, in 1969 John Grahame announced in NATURE (221: 976) that he had found that in L. littorea the penis could be shed whole, which placed doubt upon the use of the penis as a guide in sexing L. littorea. Grahame considered it possible that L. saxatilis might have the same habit, and recently I have several times found a fully mature, free penis in the washings from some tidal aquarium chambers containing L. saxatilis only. All the animals in the tank were apparently healthy, leading to the deduction that the organ had probably been shed in the same way as reported for L. littorea. A more detailed examination of this phenomenon in L. saxatilis is now being made, to establish that penis-shedding does take place in the normal course of events, and to investigate the histological mechanisms which must be involved. However, it was thought worthwhile to circulate this preliminary note as a further caution to Littorina sexers.

Charles Pettitt
Manchester Museum,
Manch. M13 9 PL, Engl.

TIDE TABLES AVAILABLE

Advance information relative to the rise and fall of the tide is given in annual tide tables. These tables include the predicted times and heights of high and low waters for every day in the year for a number of reference stations and differences for obtaining similar predictions for numerous other places. Published yearly by National Ocean Survey, Rockville, Maryland 20852, the following four volumes are available only from the National Ocean Survey and its sales agents (which include such book stores as Brentano's) at $2.00 per volume:

Tide Tables, Europe & West Coast of Africa (including Mediterranean)

Tide Tables, East Coast of North & South America (incl. Greenland)

Tide Tables, West Coast of North & South America (incl. Hawaiian Is.)

Tide Tables, Central and Western Pacific Ocean and Indian Ocean.

"Who has not, at some time or other in his life, slipped straws into the yellow slug's one breathing hole?" (I never did and we wish you wouldn't.)

H. de Balzac in The Wild Ass's Skin

"One afternoon we went out to Saint-Cloud and sat in the park. The girl started collecting snails from the grass, and we put a wall of stones round them." (You can do better things with a girl in a park.)

V. S. Pritchett in Midnight Oil

NYSC NOTES NUMBER 196 NOVEMBER 1973

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FOUNDED JAN. 1949

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These NOTES are distributed by mail to all members of the NEW YORK SHELL CLUB, Inc. Dues: Full membership $4.00 per year, $1.50 additional for each of other members of the same family -- with one copy of NOTES per family. Corresponding membership $2.50 per year. A limited number of back issues of the NOTES are available at $.30 postpaid per single copy; also bulk rates. Items and articles for publication in the NOTES should be sent to the Editor. The Corresponding Secretary should be notified promptly of any change in your address.

The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, DECEMBER 9, 1973, at 2:00 PM

PROGRAM: SHELLING THE KII PENINSULA (with color slides)
by David Schirokauer

SHELL-OF-THE-MONTH

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On November 15, 1973 our member and long-time treasurer Miss Mathilde Weingartner will be honored at the 12th annual Women of Achievement presentation ceremonies on Staten Island for her work in nature study and conservation. An account of this remarkable lady appeared in the Staten Island Advance of October 21st. In the next issue of these NOTES we plan to present a report on the ceremonies together with some notes taken from the newspaper account. In the meantime: Congratulations, Tillie! We're all proud of you.

ARTICLE OF THE MONTH

The starfish, Asterias vulgaris senses the presence of intact oysters, Crassostrea virginica, when placed as much as 120 cm away, upstream from them and showed a positive chemotaxis. It responds similarly to aqueous extracts as low as a few parts per billion. Threshold sensitivity of sea stars is decreased by particulate matter suspensions and oil dispersions as low as 10 mg/liter. The subject is discussed by K. J. Whittle and M. Blumer in an article appearing in the Woods Hole Oceanographic Institution Reference No. 70-20 for May 1970 entitled, "A predatory-prey relationship. Sea stars - bivalves."

Dr. Henry D. Russell

He took his Trumpet in his hand, hys Trumpet was a shell
Of some great Whelke or other fishe, in facion like a Bell
That gathered narrow to the mouth, and as it did descende
did waxe more wide and writhen still, downe to the nether ende.

Ovid, Metomorphoses (trans. Golding, 1567).

LATTER DAY SNAILS

Morris K. Jacobson

When I was in Washington recently, I met and dined with a scientist who, as it turned out, was working on a secret U. S. Government project designated by the code name WATSATYMA which dealt with a modern day version of a time machine like the one originally invented by Dr. H. G. Wells and Professor Joseph "Buck" Rogers. During the meal we conducted a number of scientific experiments having to do with the reaction of human endothelial and epithelial tissues when immersed in shotglass doses of more or less concentrated alcohol -- generally varying between 80 and 86. The scientist, who for security reasons we can only designate as Dr. XXX -- since the usual Dr. X designation is several times preoccupied by other authors and because we wanted to honor the liquid chemical used in the experiment -- was kind enough -- or rather, was made kind enough by overexperimentation with the liquid in question, to show me a document which the experimental time machine had brought back from the year 2372! Below you will find extracts of this word from the World of Tomorrow.

* * * * * * * * * * * * * * * * * * * *

Reprint from the Proceedings of the *IMCZAPRHCS/U, vol. 32467972, p. 18ff, Dec. 31, 2372.

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*FOOTNOTE: It was once pointed out that whereas conchology deals with the shell, and malacology with the animal inside, malacozoology is primarily interested in the study of the whole animal, shell and all, in its relationship to the zoological world around it. But about 1998 a scholar named Dr. P. Hurrington Clinch -- pointed out that even the term malacozoology does not begin to include all the various activities that true shell scientists engage in; namely, anatomy, physiology, histology, radular studies, chromosome counts plus several more. Hence he proposed that the name of the science by **Molluscoconchozooanatophysioradulohistolochromosomology. His suggestion was generally accepted, but the nomenclatural innovation was bitterly attacked in some quarters, where it was called an example of shameless name splitting. Nevertheless, as we all know, the new name fortunately stuck.

**FOOTNOTE: When the international Molluscoconchozooanatophysioradulohistolochromosomological Union and/or Society was formed (in Philadelphia on Jan. 18, 2072) there was much acrimonious debate as to whether the new group was to be a Union, or, as some held a Society. Years of vigorous controversy ensued, in the course of which three duels took place among some excitable colleagues -- none of which, fortunately -- or, as some think, unfortunately -- had fatal results. Ultimately the whole matter was referred to the newly formed Security Council of the International Commission on Zoological Nomenclature, which in spite of three Soviet vetoes, in June 2089 issued opinion 678432 stroke 56 setting up the name as we now have it, namely the

INTERNATIONAL MULLUSCOCONCOZOOANATOPHYSIORADULOHISTOLOCHROMOSOMOLOGICAL SOCIETY and/or UNION (or UNION and/or SOCIETY) -- (this matter of line priority has not yet been adjudicated) or IMCZAPRHCUS for short, pronounced imkzap rhcus. End of Footnote.

(The paper continues). The recent trip of the Soviet-American Selenite Expedition to the Sea of Lenin on the dark side of the moon in June 2189 has produced some results that are not without interest to members of the Imkzap Rhcus. It seems that in an isolated valley of the Sea of Lenin (which, as is well known, is neither a valley, nor a sea, nor Lenin) the explorers came upon a curious collection of hollowed out crevices inhabited by organisms that obviously were descended from -- or on the other hand, gave rise to -- the mollusks of the earth. Unfortunately not a single molluscoconchozooanatophysioradulohistolochromosomologist was among the party -- an ommission bitterly resented by our entire Society and/or Union -- and hence no specimens were collected and no new families, genera or even species could be introduced, except, of course, by several overenthusiastic workers who in April 2195 published a massive monograph called *Principles of Selenomalacology* in which were erected 16 new families, *83* new genera and 71 new species were named and described. The discrepancy between the 83 new genera and only 71 new species was explained in a lengthy footnote by the fact that some of the new genera were so esoteric that at the moment no species could be assigned to them. These new genera were called *Bushwagenera* or *Buffalo Chips* and were hailed in some circles as new and startling advances in the science of nomenclature. The authors added that they were leaving to later scholars the exact determination of what the genera really meant, thereby providing countless future PH D candidates with meaningful and worthwhile subjects of investigation for PH D theses. The names, at any rate, they added, have already been validly published and hence the chief scientific problem has been satisfactorily eliminated for all time.

Now, fortunately among the exploring party there was a very astute young scholar who specialized in rainworms, a wet field in which can be found only three experts in the entire universe, one of them in an institution for erratics. This scholar noted that the scraping, squelching, sucking, clicking, and belching sounds given forth by the selenomollusks seemed to fall into a series of fixed patterns. Coming upon an assemblage of these creatures one day in an unusually large crevice, he hit upon the idea of making a tape recording of the sounds. And when, back on earth, this tape was fed into a computer, our scholar noted with considerable satisfaction that he had indeed come across a primitive sonic and auditory means of communication that had evolved among the selenomollusks.***

***FOOTNOTE. When these data subsequently appeared in print, one school of shell experts announced emphatically that this proved that the selenomollusks, being obviously more advanced than our terromollusks, are clearly the ancestors rather than the descendants of the latter. To

this, experts of another school pointed out that on the contrary, in their view, it is the terromollusks who predated and gave birth to the selenomollusks. Whereupon the proponents of the first school maintained that 1) their opponents had completely misinterpreted the available data, and 2) even where the data were correctly interpreted, the use made of them was highly questionable, and 3) who the hell asked for their opinion anyway? End of footnote.

The computer version was submitted for study to the author of this paper. Unfortunately he soon found that only a few complete sentences and ideas could be deduced from them. Nevertheless a brief preliminary account of these determinations of the intelligible sentences is here given, in the hope that future studies will elucidate the entire version satisfactorily, and in the further hope that this incomplete study will be enough to have his National Science Foundation grant continued indefinitely.

From what the present author could determine after exhaustive studies, the recording seems to be an account of a session which bears a startling resemblance to a terrestrial zoological convention. One selenomollusk was apparently reporting on the presence of a strange assortment of creatures discovered near a space ship that had crashed some 500 lunar leagues to the north. This might parenthetically be the space ship of the combined Egyptian-Israeli space probe of 1987 which was never heard from after radio contact was broken off shortly before the craft was to land on the moon. A study of the wreck might someday give the lie to the theory that the expedition came to an unhappy end on account of a quarrel among the crew members about having couscous or matzoh balls for lunch every day.

Below the author undertakes to transcribe a few sentences from the computeral report:

SPEAKER: They (that is the unknown creatures near the space craft) appear to be unisexual (with some exceptions) and still suffer from the primitive state of bilateril symmetry, a state which our own ancestors abandoned -- that is, the more advanced among us -- countless ages ago. They have two kidneys, two lobes to the pulmonary organ, four chambers to the heart and in general their bodily structure argues strongly for their extreme backwardness in the evolutionary scale. Indeed, in this respect they resemble our own savage archaeogastropods. (INTERRUPTION FROM THE AUDIENCE: No, they resemble the monoplacophora! GENERAL LAUGHTER AND APPLAUSE).

SPEAKER: Their radulas are fixed and unmovable, except as the double, probably split, odontophores guide them in a strictly up and down motion (INTERRUPTION: How quaint!). It is difficult to see how such primitive organs can be of any use at all in the proper trituration of food particles before ingestion.

Posterior to the double, or split pseudo dontophoral apparatus -- I hereby so designate these organs -- and within the buccal mass, lies

a large, fleshy, highly mobile structure that in some of the individual specimens under observation never seemed to come to rest at all, leaping and flapping about ceaselessly and giving rise to a series of highly irritating sound waves. Though further experiments are still necessary, it would appear that these annoying sounds constitute some primitive means of sonic-auditory communication. This organ, moreover, somewhat resembles our own highly evolved, perfected radular ribbons, except that it is completely naked of teeth.

The teeth themselves, or, more accurately, the dental plates, are highly perishable, and, once lost, are not naturally replaced as is the case in all higher organisms, as in us gastropods. However, in some specimens artificial removable plates were detected.

INTERRUPTION: Nonsense! Impossible! Science faking!

(The speaker continues). Another peculiar aspect of these organisms is that no proper pedal organ of locomotion -- whether aulacopodal or holopodal -- could be detected, unless the highly mobile buccal organ referred to above could be conceived of as performing such a function. In general appearance it is, after all, not too unlike our own highly developed organs of locomotion. Nevertheless this is quite unlikely since the organ in question, even in the individual where it was longest and most highly developed, still did not attain sufficient apparent size to achieve any sort of motion in the bulky corpus to which it is attached. We therefore are forced to conclude that the organisms above briefly described are epifaunal creatures with very limited powers of spatial progression, if any.

INTERRUPTION. No, this is too much! How dare the speaker.......

Here unfortunately the tape became too garbled and/or fragmentary to be of any further use. This observer can therefore only conclude that the meeting broke off in disorder, or that it did not, or both.

SHELL COLLECTING NOTES

Earl H. Reed, Senior Curator
Springfield Museum of Science, Springfield, Mass. 01103

IV. Storage and Display

Shells present certain problems in both display and storage because of their variation in size and shape. Ideal storage is probably in "shell cabinets" similar to those described in various shell books and used in many museums. Briefly, such cabinets consist of a variable number of shallow drawers or trays, mounted on supports so as to slide in and out, and enclosed in a frame which is, preferably, covered, and more or less dustproof. A few of the drawers are made somewhat deeper, to hold larger species. Within each drawer, the specimens are housed in shallow paper trays, made in multiples of a uniform size, so they will fit neatly.

Such cabinets are expensive, and use considerable floor space, so that many amateurs must consider substitute methods. Sturdy cardboard boxes, similar to "shirt boxes", or emptly cigar boxes, preferably of uniform size, may be used, and stacked neatly on shelves. Boxes of cardboard must not be stacked too high, or used for very heavy specimens, or they will quickly sag and warp.

Whatever means are used, the all-important thing is to be able to find any given lot of shells with a minimum of difficulty. The best system for almost everyone is based on the taxonomic order of families and genera, using the same order as is used, with some variations, in most popular and scientific books on mollusks. If desired, a secondary breakdown by geographic area is possible, although this introduces further complications. The beginner may, at first, find it easier to simply place the various genera in alphabetical order, without regard to higher classifications.

The very smallest shells are placed in small vials or very small plastic boxes, with a slip of paper bearing the lot number. These vials or boxes, plus the somewhat larger shells, are placed in trays, with an accompanying label, and trays are then stacked in drawers or boxes for storage. The largest shells may be in extra large trays or even in cartons if necessary.

In addition to storage, most collectors like to have at least some shells on display. For larger displays, old china closets, glass fronted bookcases, and second-hand sales cases have been used. Glass-topped coffee tables, deep "shadow-box" type picture frames and other items are suitable for smaller displays. For exhibiting tiny shells, either glass-topped boxes with cotton-wool backgrounds, or the familiar Riker insect mounts are suitable. In all cases, open display specimens are easily broken, and also tend to collect dust rapidly.

There are no hard and fast rules, other than those governing almost any type of display. Shells should be well lighted, not too crowded, labelled uniformly, if at all, and selected for color, size, and general attractive appearance. The collector will find that friends and casual visitors will be interested in a well-planned display, while visiting collectors, if seriously interested, would probably prefer to wade through drawers or boxes of specimens. Each collector must decide for himself, based on size of collection, funds available, use to which shells are to be put, and other factors, in just how elaborate a system of storage and display he wishes to engage.

One final word. Unless the collection is strictly for "show", no specimens should be permanently mounted, so that they cannot be easily removed or rearranged. Unless a specimen can be easily removed and handled for critical inspection, many identifying characteristics cannot be seen, and it is difficult to cope with the constant changes in classification and relationships which occur.

FROM THE MINUTES OF THE OCTOBER MEETING

The Shell-of-the-Month, presented by Nick Katsaras, was Conus bengalensis. Not surprisingly, the specimen he had on hand was a fine one. As a P.S., he remarked that his last (most recent) last (final) auction was a conspicuous success, despite the absence of six of the most avid bidders of previous last (finis, kaput, 30) auctions. "After all," observed a veteran Katsaras-watcher, who asked to remain anonymous, "What Parke is to Bernet, Nick is to Bergenfield." This observation, while appreciated for its rhythmic balance, was not widely understood.

The first of the principal speakers, Leo Hernandez, described a recent shelling trip that included stops from Miami to Boca Grande Key. Overcoming attacks by rain and sand flies, he got some good shells and good photographs. Among the latter were close-ups of captured specimens, and underwater shots of fish.

The second speaker, Mart Hulswit, presented what he called a "love story" -- his reaction to the bubble shell Micromelo undata, and his experiences in collecting and studying this species. In Bermuda, where he collected several specimens of this uncommon shell in tidepools, he rented a laboratory at the Bermuda Biological Station for Research and spent several days observing and photographing them. Using a microscope that was part of the lab equipment, he made microphotographs of embryos in their egg cases. He showed these, along with pictures of the lab, the tidepools, living specimens, their egg strings, and a nudibranch that he collected. Finishing with a bit of celestial one-upmanship, Mart preceded his near-obligatory sunset shot with one of a moonrise.

Milton Werner

MORE ON PENIS SHEDDING AMONG LITTORINA.

I was very interested to see in the NEW YORK SHELL CLUB NOTES No. 195, p.7, Oct. 1973, the note by Charles Pettitt concerning shedding of the penis in Littorina saxatilis. I have run into reports of this phenomenon from various sources for several years and have worried about it because, as Pettitt pointed out, one generally considers the structure to be a dependable sexing character, and to learn that the animals may drop them seasonally, or depending on their condition or for whatever reason seems an horrendous occurrence. Besides, I have found the littorine penis to be a fairly good morphological character, differences seemingly being constant along species group lines and quite often between species.

My theory for the severance of the penis from male littorines has as its basis a functional causation. One who has observed male and female littorines in copulation will have noted their usual relative positions to be with male on top of the shell of the female with his aperture located just above hers. The penis is inserted down and then reflected back into the mantle cavity of the female and it is engorged with his body fluid and apparently "locked" in place. The basal "stalk" at this time is rather stretched and narrowed. It occurs to me that if, at this moment, either animal, but more probably the female, should be disturbed and hunch down against the rock substrate, the penis could be neatly severed by a sharp outer lip. This is only a theory, however, and requires scientific observation to prove or disprove.

Dr. Joseph Rosewater
National Museum of Natural History.

NYSC NOTES NUMBER 197 DECEMBER 1973

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ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, JANUARY 13th, 1974, at 1:30 P.M.

PROGRAM: 1:30 to 2:30 PM Coffee, Cakes and Socializing

A. D'Attilio on MORPHOLOGY OF THE TYPHINAE, MURICIDAE

As a special memorial to the 25th Anniversary of the New York Shell Club, we are thinking of the possibility of having a Special Coin Silver Medalion struck for the occasion, but because of the cost of special dies, it will be necessary that we have an order for 100 pieces in advance, at $3.00 each. Please contact F. Nelson at 95-24 110th Street, Richmond Hill, New York 11419, if you are interested by January 15, 1974.

The New York Shell Club extends a hearty welcome to the newly formed New Jersey Shell Club which was organized at a meeting on October 21 held at the Bergen Community Museum of Arts and Sciences. More than fifty people attended so that the Club got off to a good start. The officers are: Dorothy Germer, President; Ethelyn Woodlock, Vice President; Myra Chaplin, Secretary; and Morton Hahn, Treasurer. Meetings will be held on the third Sunday of the month at the Museum located at Fairview and East Ridgewood Avenue, Paramus. Dues are $4.00, and $1.00 for each additional family member. The existence of this club will make it now possible for shell people in the metropolitan area to attend two meetings a month. Let's all go!

SOME 1974 SHELL SHOW DATES

Southwest Florida Conchological Shell Show, Ft. Myers Auditorium, Ft. Myers, Florida. January 23 to January 27, 1974.

Broward Shell Show, Swimming Hall of Fame, Ft. Lauderdale. February 8 to February 10, 1974.

South Florida Shell Show, Museum of Science, Miami, Florida. January 25 to January 27, 1974.

St. Petersburg Shell Show, Treasure Island Auditorium, St. Petersburg Beach, Florida. February 21 to February 24, 1974.

Sanibel Shell Show, Sanibel, Florida. March 7 to March 9, 1974.

Bill Old will be judging at the Broward, the South Florida, and the Southwest Florida Shell Shows. Those of us who cannot attend will look forward to his report.

[illegible]

[illegible]

[illegible]

NOTES ON MICROMELO UNDATA BRUGUIERE

Mart Hulswit

It was in June of 1970 that I first became acquainted with this species, when, on a collecting trip in Bermuda with Mr. Russell Jensen of the Delaware Museum of Natural History, he told me of its comparative rarity.

A look at Abbott's "North American Seashells" gave me some indication of the beauty of the shell of this opisthobranch of the Family Hydatinidae, but it was not until Mrs. Sally Riker of Bermuda found a specimen in a South Shore tidal pool on the last day of our field work that I first appreciated the great beauty of the animal itself. The lacy mantle, with faint yellow fringe, the oddly striped red pattern of the shell and the lovely flowing movement of the mantle were absolutely enchanting.

Two weeks later, with the Micromelo in mind, my wife and I spent a ten-day holiday in Bermuda, at an apartment on the South shore of the Parish Paget. The shore line between our place and the ocean was hilly, but undeveloped, and thus fairly easily penetrated and explored. A steep descent to the rocky shore yielded many tide pools and quite a few specimens, under approximately one-foot-square rocks at low tide. They appeared, usually in pairs, and occasionally in threes, almost always associated with coiled white eggstrands about an inch long, on the underside of the rocks. The site of deposit was always fairly algae-covered.

The almost constant presence of the eggstrands suggested to me that this might be the breeding season. A further indication was the tendency to find two specimens to each underside of rock examined which rather suggested pairing for mating.

I turned one live specimen over to Mrs. Riker for observation in her salt water aquarium. She isolated it in a mesh compartment approximately 4" by 4". The next morning, the specimen had deposited an eggstrand identical to those observed in the field, which until then could only be presumed to have been deposited by the other observed specimens. This deposit in isolated captivity confirmed field observations rather handily.

The same conclusion was confirmed by a pair of live specimens turned over to Mr. and Mrs. George Raeihle of New York, after careful transportation via jet in a container of filtered sea water. One of the two specimens deposited eggs during the night following, and was photographed beautifully, by Mr. Raeihle, including the eggstrand.

In all, some 15 specimens were collected, and easily twice that many were left in the field. Mr. Arthur Guest, President of the Bermuda Shell Club, collected his first specimens with me at that locality, where I found it to be quite common at this particular time of year (June).It was one of the most enjoyable days of collecting I ever had, due mostly to the pleasant company of this gentleman, who has

collected in Bermuda for many years, and who specializes exclusively in Bermudan mollusca. We were most careful to preserve the habitat of this species in Bermuda. In fact, having observed that the favored breeding site seemed to be the underside of approximately one-foot-square rocks, in tidal ponds on the South Shore, we spent an entire day placing such future breeding sites into the pools in the hope that new favorable breeding sites would be created. It is sincerely hoped that these efforts will be fruitful.

The 15 specimens were kept alive, in a captive state, as long as possible, that is for approximately 5 to 10 days. The environment was a make-shift affair: a stainless steel pan, carefully cleaned, about 18" by 8", with a depth of seawater of abcut 2". The animals appeared to remain active, though obviously hungry, for several days. The seawater was changed twice daily with a thorough rinsing, through a daily replenishment of fresh seawater from its home source, with the help of a motorbike, at sunset and sunrise. The changes of water were always visibly relished by the animals, if one could judge by their increased mobility shortly after the procedure. But, no attempt was made to feed them. I had no idea what they fed on! An airstone, driven by a small battery-operated pump, was probably an assett. Despite these precautions, a mortality of about 50% was experienced during the ten days.

HORSE MUSSELS (MODIOLUS MODIOLUS L.) AS FOOD

J. Davies

I was recently very surprised to see Horse Mussels (Modiolus modiolus) on sale in a fish-shop in the east end of Glasgow. These were exposed in the window, labelled "Clabbydoos 5p each". As I had always believed with Step (1945) that the affix "Horse" signifies that these mussels are coarse and unfit for food, I made some inquiries at the shop. I was told that far from being inedible they have been eaten in Glasgow for a considerable number of years and are, in fact, considered quite a delicacy, -- which was corrorated at another fish-shop in the centre of Glasgow. The source of these molluscs is Loch Fyne in the Firth of Clyde, or sometimes off the N. E. coast of Scotland.

I am informed by Mr. K. Thomas of the British Museum (Natural History) that it is an edible mollusc and is eaten quite a lot in Canada. "Another person informs me that she has seen a recipe using M. modiolus in a book on Mediterranean cookery. As ..... most specimens are (obtained) from dredging ..... (they) are not generally available in fish-shops here".

The name under which they are sold is of some interest. It appears to be a corruption of the Gaelic Clab-dubh, pl. Claba-dubha, the literal meaning of which would be "black, large-mouth". There is, however, much confusion in the Gaelic names of plants and animals and the same name is frequently given to many, sometimes widely-differing, species. Thus Dwelly (1941) equates Clabdubh with 1) Mussel, 2) Phola (sic!), whereas McNeill (1910) gives Cyprina islandica. On

another page, Dwelly, quoting from A. Forbes "Gaelic Names of Beasts etc." gives Cockles, Clams. The usual Gaelic name for the Common Mussel (Mytilus edulis L.) is Feusgan (from Feusag: a bean) or Feasgan, and McNeill gives for Horse Mussel Feasgan -mor (i.e. the Great Mussel).

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McNeill, M. 1910. Colonsay, One of the Hebrides. Its Plants ... Gaelic Names of Birds, Fishes, etc. .... P.42.

Step, E. 1945. Shell Life. New ed. p. 68.

(reprinted from CONCHOLOGISTS' NEWSLETTER, London, Sept. 1973, no. 46)

The Editor of NYSCN found the following in EDIBLE BRITISH MOLLUSKS, by M. S. Lovell, London, 1867, p. 53 dealing with the same topic: "in the Feroe Isles, the large horse-mussel, Mytilus modiolus, is eaten, and they call it in Feroese ova. Mr. Alder tells us that at Rothsay they are collected for food (Forbes & Hanley, Brit. Moll., 2: 185) (though not so delicate as Mytilus edulis) and in the Shetland Isles for bait, where they are known by the name of yoags. They are also eaten in the north of Ireland, but not considered very good, on account of their strong scent and flavour; but they are capital bait for cod. At Tenby they call Mytilus modiolus the poisonous mussel, and affirm that no one ever ventures to eat it."

NOTE: The Editor's own opinion is that anyone who ventures to eat things called clabbydoos or yoags probably gets what he deserves.

NOTES ON A TRIP TO EAST AFRICA

Ernest Walton

A tour of game parks in Kenya and Tanzania this summer brought my family and me briefly to the Kenya Marine National Park at Watamu on the Indian Ocean. A morning's snorkeling there proved disappointing as the tide and sediment conditions were unfavorable. Fishing, shell collecting, breaking of coral, etc., is strictly forbidden there and I abided by these rules. As a result, I had to pass up a rather large cone I observed in the water. The beach only yielded some beaten up bivalve halves, some rather smelly Janthina janthina, a Spirula spirula and some cuttlefish pens. Many other areas of the Kenya coast, I was informed, particularly those frequented by tourists, have been declared protected areas and shell collecting is permitted there under license only. I was also told that Tanzania is now instituting similar protective measures.

Although our group tour was tightly scheduled, I did sneak in a quick excursion along the southern side of Kilifi Creek, north of Mombasa. It turned up a large number of Conus ebraeus at the tide line. Nerita

plicata and *Nerita albicilla* were plentiful and *Nerita textilis* also turned up. The shells of *Strombus mauritianus* and *Strombus gibberulus* were being marched about by hermit crabs and I also found some *Strombus floridus*. Some *Drupa* sp., *Cerithium* sp. and *Mitra* sp. rounded out the picture.

However, souvenir stores and peddlers supplied a good alternative to shell hunting al fresco. I prefer to think that the many shell that were offered to avid tourists were obtained pursuant to a license duly issued, although the thought that perhaps here, as in the game parks, there was some poaching going on cannot be laid to rest completely. *Cyprea tigris* in all sizes was in abundance. There were plenty of *Cyprea arabica*, *C. anulus*, *C. erosa* and *C. carneola*. There were also lots of *Lambis lambis* and *L. chiragra arthritica* but I only saw one *L. croata* which I bought from a peddler on the beach. Gorgeous *Cassis rufa* were ample, again in all sizes as were *Conus striatus*, *Bursa lampas* and *Harpa major*. This is not all that could be bought readily but I did not make any list. Naturally, the sellers tended to concentrate on the large, showy shells that were most likely to appeal to the souvenir hunting tourist although some other items would occasionally show up. The prices for the "tourist" shells were fairly standard, at least in Mombasa, probably because of the widespread competition. On the unusual items there was great fluctuation, generally because of the sellers not knowing what they were and some probably suspected that they must be valuable if you showed any interest in them. One peddler wanted as much for a common Drupe shell as I would have paid for a good *Cassis rufa* in Mombasa. Bargaining is expected and often advisable. Collection data is unavailable; it generally consisted of a vague wave of the hand towards the ocean.

Many of Kenya's mollusks are included in an attractive series of stamps which were first issued in December 1971 and are in current use. The series shows, following the names used on the stamps: *Mitra episcopalis*, *Clanculus pulicarius*, *Sanhaliotis varia*, *Trochus flammalatus*, *Janthina globosa*, *Cassis rufa*, *Nautilus pompileus*, *Chicoreus ramosus*, *Charonia tritonis*, *Fasciolaria trapezium*, *Turbo fluctuosus*, *Conus textile* and *Pterocera scorpio*.

As to the other animals in the Park, they are all one expects. The lions can be majestic, though they are generally sleepy. The elephants are impressive and to me, the most interesting of them all. The zebras are loveable and the gnus funny. The antelopes and giraffes are elegant and graceful. The hyenas seemed a little grouchy and bad-tempered but they were anything but the slinking cowards that they are often portrayed to be. None of these animals cease to hold your interest and attention, regardless of how often you have seen them already. Despite what the African governments are doing to protect them, they are still threatened by many man-made and natural dangers. Their preservation will be its own, ample reward for whatever we can do towards that end.

A NEW ADDRESS: Our member Philip Cameron has moved to 2593 Bramblewood Avenue West, Clearwater, Florida 33515.

MATHILDE P. WEINGARTNER HONORED

Mathilde P. Weingartner, Treasurer of the New York Shell Club, is also the Science Curator of the Staten Island Museum. Her appointment to that post in 1961 followed many years of volunteer work which began when she catalogued the shell collection, bringing order out of a chaos of cigar boxes.

On November 15th she acquired yet another title, having been chosen as one of Staten Island's Women of Achievement for 1973. Presenting the award at a luncheon attended by 600 persons, Surrogate Frank D. Paulo remarked that she "had spent years, before it was the vogue, directing the conscience of the community towards nature."

To quote THE STATEN ISLAND ADVANCE, which sponsors the annual awards: "Since her childhood, Miss Weingartner has believed and has been successful in convincing others that community development does not have to mean destruction of wooded areas and natural wildlife resources.

"She was a prime force in founding the William T. Davis Wildlife Refuge in New Springville, part of the Staten Island Institute of Arts and Sciences, and also has devoted time to support programs at High Rock Conservation Center. Author of two pamphlets, "Staten Island Walk Book" and "Plants and Animals of Staten Island", she also has directed her talents as a self-educated conservationist, natural scientist, wildlife expert and ornithologist in leading nature studies for children and adults. She also has been active in local, state and national conservation organizations.

"Reviewing her achievements in helping to save areas of the Island from what its developers call 'progress', Judge Paulo said to Miss Weingartner, 'You are indeed a prophet with honor in this community.'"

Veronica Parker Johns

FROM THE MINUTES OF THE NOVEMBER MEETING.

Of the announcements made, the happiest was that Tony D'Attilio had accepted our invitation to speak at the Club's 25th anniversary (January '74) meeting. To the many friends Tony and Rose left behind when they moved from New York to San Diego, their presence will make the celebration a more joyful and meaningful one.

Mr. & Mrs. Joseph Bao presented the Shell-Of-The-Month, Tridacna squamosa. They displayed three beautiful specimens, one almost 12" long, and all colored in white, yellow and orange. They had collected these, and others, on the reef and near the shore of the western side of the Palau Islands group. They showed slide photos of the locales, and underwater pictures of the living squamosa, growing well-camouglaged among the branches of dead staghorn coral.

The first speaker, Karl Jacobson, referred briefly to the vast and diverse land-snail fauna of the uplands of Cuba, and showed photos of

locales in which he had collected. His interest in Cuban malacology had led him to learn all he could about one of the early investigators, Charles Wright, a native of Connecticut. Wright collected many of the species described by Ludwig Pfeiffer. Karl later spent enough time in Wethersfield, Conn. to look up the available records of Wright's historyand circumstances, and visit such memorials as the school named for Wright, a teacher, and houses he had lived in. As Karl related his findings, he showed pictures taken at these stops.

Myra Chaplin followed with a fine series of slides covering her summer jaunt through Indonesia on the Lindblad Explorer. Among the stops were Jakarta, Bali, Sumbawa, Flores, Savu, Timor, New Guinea and Banda in the Spice Islands. She was fortunate that her group went ashore on many a low tide, and the shelling was good. This she proved with an extensive display of specimens.

Milton Werner

ARTICLE OF THE MONTH

A most interesting article by D. J. Tramter and O. Augustine appeared in Mar. Biol. 18: 115-128, Jan. 1973 entitled "Observations on the life history of the blue-ringed octopus, Hapalochlaena maculosa." The authors describe the life history of this poisonous species as lasting 7 months -- 4 months from hatching to maturity, 1 month from copulation to egg-laying, 2 months for embryonic development which is direct, no planktonic stage. Eggs are cradled between the female's raised skirt and the body. One week before hatching, the embryos reverse their position in the egg. Remnants of yolk-sac are consumed in a few hours, pieces of crab are eaten within a week and live crabs are killed by piercing the carapace of the prey at the abdominal junction and using venom within a month. It is a highly evolved form and its direct development, simple diet and rapid growth make it relatively easy to cultivate.

Henry D. Russell

Most of us are familiar with raw oysters, fried oysters and oyster stew. A few, perhaps, have sampled the "cringed" oyster, which enjoys some popularity along the Eastern seaboard. A cringed oyster is one that is shucked then plunged into a glass of bourbon just long enough for the whisky to make it curl and twist in revolt. It is then lifted from the glass and eaten. This is a clever way of taking nourishment.

Nelson Bryant, WOOD, FIELD AND STREAM, N. Y. Times, 12/7/72.

JANUARY 1974

198

25th

ANNIVERSARY

1949 – 1974

THE NEW YORK SHELL CLUB was founded January 30, 1949 by Walter H. Jacobs and Morris K. Jacobson, its purpose to engage in and promote the study of molluscs.

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Morris K. Jacobson	1949 c
Walter H. Jacobs	1953 c
Anthony D'Attilio	1955 c
Edward F. Cowles, Jr.	1957
George E. Jacobs	1959 c
Harold S. Feinberg	1961
William E. Old, Jr.	1963
George Raeihle	1965
Mansfield C. Fuldner	1967
Milton Werner, Jr.	1968
Mart Hulswit	1970

c - charter member

These NOTES are distributed by mail to all members of the NEW YORK SHELL CLUB, Inc. Dues: Full membership $4.00 per year, $1.50 additional for each of other members of the same family -- with one copy of NOTES per family. Corresponding membership $2.50 per year. A limited number of back issues of the NOTES are available at $.30 postpaid per single copy; also bulk rates. Items and articles for publication in the NOTES should be sent to the Editor. The Corresponding Secretary should be notified promptly of any change in your address.

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DEPARTMENT OF LIVING INVERTEBRATES

January 3, 1974

Mrs. Dorothy Raeihle, President
New York Shell Club
5346 82nd Street
Elmhurst, New York 11373

Dear Dorothy:

I wish to take this opportunity to extend to you and the membership of the New York Shell Club my heartiest congratulations on the occasion of your Twenty-fifth Anniversary. Through the years, the Club has made outstanding contributions to the field of malacology and has served well the legion of local collectors in all areas of their malacological interest.

Members of the Club have generously contributed scientifically documented specimens to the Museum's malacological collection and have assisted in the preparation of the Museum's exhibitions.

I wish the Club every success in the future, and I look forward to a long and cordial association with your outstanding organization.

Again, I extend my best wishes on this festive occasion.

With kindest personal regards, I am

Cordially yours,

William K. Emerson

William K. Emerson
Chairman & Curator

WKE/lj

The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, FEBRUARY 10th, 1974, at 2:00 P.M.

PROGRAM: EVOLUTION OF A BEACH (With color slides)
By Maxwell Cohen, Chairman
Department of Biology
Beach Channel High School

SHELL-OF-THE-MONTH

To be announced.

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OF THE NEW YORK SHELL CLUB
ON THE OCCASION OF ITS 25th ANNIVERSARY

What visitor to a beach has not picked up at least a fragment of a shell and wondered about it? Dr. Walter Jacobs had enough curiosity and interest to search out others with the same interest, was referred to Karl Jacobson by the AMU, and together they founded the New York Shell Club in January, 1949. What has come of it? First, we have met many wonderful people, both amateur and professional. Lasting friendships have developed.

We now have 326 members and, in addition, have association with a number of other groups including museums and libraries.

The guidance and encouragement of professionals, particularly Dr. William K. Emerson and William E. Old of the Department of Living Invertebrates, and of Dr. H. E. Coomans during his stay at the American Museum, have been invaluable in directing interests toward

research and observation. Foremost among those who became serious students are: (1) Morris Karl Jacobson, whose exploratory walks on Rockaway Beach finally -- with the urging and constant encouragement of Walter Jacobs -- resulted in the writing of "Shells of the New York City Area" which was coauthored by William K. Emerson and illustrated by Anthony D'Attilio. The book, first published in 1961, was reprinted in 1971 as "Shells from Cape Cod to Cape May." Also published in 1971, "Wonders of the World of Shells" was again written by Jacobson and Emerson. Now retired from teaching, Mr. Jacobson gives more time to his work as Research Associate with the American Museum of Natural History and the Museum of Comparative Zoology. (2) Anthony D'Attilio, an artist, also advanced to become Research Associate at the American Museum; he now is Assistant Curator at the San Diego Museum in its Department of Invertebrates, and is still deeply immersed in the study of Muricidae. (3) Harold S. Feinberg who, many years ago, was bird-watching at a beach when he happened to glance down and see an Epitonium, the shell which lured him to a new hobby. He is now working at the American Museum as Technician, also (as with Mr. Jacobson and Mr. D'Attilio) in the Department of Living Invertebrates.

Nick Katsaras first became intrigued with some shells that he found in the Museum Shop. Joining the club in November, 1949, his interest centered on the beauty of fine specimen shells, eventually culminating in a series of auctions which have become famous.

Of other books, Gordon Usticke moved to the Virgin Islands and there compiled his "Checklist of the Shells of St. Croix," Louise Allderdice Travers told her personal story in "The Romance of Shells in Nature and Art," and Veronica Parker Johns, who has introduced sea shells to so many of us, tells of her always interesting experiences in "She Sells Sea Shells."

More of our members, too many to list here, have written of their studies and observations, some to be published in professional journals, many to appear in our club publication, the "New York Shell Club Notes." The "Notes" were initiated by Karl Jacobson in the first year of the club, and contain a variety of articles, news items and observations, some of which have been listed in the Zoological Record. We urge our members to continue to bring to the meetings, and to send to the "Notes" their observations and reports, and in thus sharing their interest enjoy even more the fascinating world of shells.

Dorothy Raeihle

LOOKING BACK, LOOKING AHEAD

1948 was quite a year. On Memorial Day the Indianapolis 500 was won with the dazzling speed of 119.8 MPH, and somewhat later in the year a little man from Missouri astonished H. V. Kaltenborne and the rest of the world by being elected President of the United States. In Philadelphia Dr. Pilsbry was struck by an automobile, but being only 86 years of age, bounced back to health in no time. The American Malacological Union met in Pittsburgh during a torrid summer heat wave, and the Bulletin reporting on that fourteenth annual meeting also carried the following announcement:

> "New York City conchologists are organizing a shell club there. If you have not been contacted and are interested, you should communicate with Morris K. Jacobson, 455 Beach 139th St., Rockaway, N.Y."

The following year's AMU Bulletin reported that the new club had embarked on "An ambitious program of lectures and exhibitions." Reading on along the years (Our Member Clubs) one gets a capsule view of the developing history as familiar names begin to appear: D'Attilio, Jacobs, Jacobson, Tobleman, Marks, Katsaras, Athearn, Weingartner. Not until some years later did the Raeihles make their appearance, but how they made up for lost time!

Each year the report of the club's expanding activities made me long to live closer to New York City, and I recall my gratitude when, being responsible for assembling the reports of an ever-growing list of AMU-affiliated shell clubs, it was never necessary to send a second reminder to the NYSC secretary.

And so a score-plus-five years have passed, and one of the world's great shell clubs looks ahead to its second quarter-century. As an old friend of the New York Shell Club and of many of its members, I shall paraphrase my parting words to a like group on an earlier occasion:

> May the New York Shell Club continue to grow in scope and usefulness; may the years ahead be kind to you all.

Margaret C. Teskey
Secretary Emeritus, AMU

TO READERS OF MIAMI MALACOLOGICAL SOCIETY QUARTERLY

Because the QUARTERLY is, regrettably, no longer published, we here note a misidentification and give you the correction:

MMSQ, Vol. 5, No. 1, Summer 1971, p. 6: In an article MENUS FOR MOLLUSKS -- BY MAIL, by Dorothy Raeihle, a small yellow gastropod received in a shipment of _Arcopsis adamsi_ (E. A. Smith) was described as follows: "Only 6 mm in height, its shape and sculpture resemble those of _Mitra floridana_. There are four plaits on the columella, and from the six or seven tiny teeth inside the apertural lip it is judged to be adult. Have not seen an operculum. The animal is all white except for the black eyes at the base of the tentacles."

MMSQ, Vol. 5, No. 2, Fall 1971, p. 17: MYSTERY MOLLUSK IDENTIFIED described how the mollusk had been examined by others who positively identified it as a still juvenile _Pyrgocythara densestriata_ (C. B. Adams). A recent comparison with _Pyrgocythara densestriata_ in the collection of the Academy of Natural Sciences prove this to be an error. Virginia Maes verified that the specimen is indeed an adult _Mitra floridana_ Dall, carrying a yellow shell instead of the usual dark brown. While unusual, the yellowish form of _M. floridana_ is not rare, as other specimens with shells very light in color are in the collection of Margaret Teskey, and we had one pale specimen hatch in captivity from dark brown parental stock.

Dorothy Raeihle

CLAM JUICE AGAINST CANCER

NYSC member Sheldon Miller, MD called our attention to an article in the medical journal "Infectious Diseases" (Oct. 1973, pp. 11-14) in which the value of clam extract from the Hard Shell Clam or Quahog, *Mercenaria mercenaria* (Linnaeus), as an anti-cancer substance is discussed. Most of the work was done and is at present being done by Sister Arline Schmeer, MD, who used to be a teaching nun at St. Vincent Ferrer High School in Manhattan. Working in the Woods Hole Marine Biological Laboratory, where she studied clams and their diseases, she noticed that these mollusks were free of cancer. She had gotten the idea that clams can prevent cancer from one of her high school students, Cecilia Huala (now La Rock), who had spent a great deal of time checking various plant and soil extracts for potential anti-tumor activity. Sister Arline became convinced that this activity was the result of an antitumor substance in the extract of the clam. She named the substance *mercenene* (from the generic name *Mercenaria*) and though as of now she has not succeeded in isolating the substance itself, her experiments have convinced her beyond doubt that it does exist. A very important feature of *mercenene* is that it seems to have no toxic or side effects upon the patient.

However, some doubt has been cast upon this work by other experimenters who maintain that they were unable to duplicate Sister Arline's work. But this may well be because they had overlooked certain important details. For instance, Sister Arline observed that clams collected in very cold water produced less effective mercenene than otherwise and it may well be that these experimenters had not considered this important fact as well as others in their experiments. At any rate it is clear that only further research on a large and well-funded scale can bring us solid answers. It would be nice to know that the prolific Hard Shell Clam with its delightful oceany flavor can also serve as a weapon in the fight against one of man's most intractable diseases.

M. K. Jacobson

NERITA LINEATA - A PREEMPTION

In ARGOMON, the organ of the Israel Malacological Society (Vol. 4, p. 21, October 1973), Dr. Mienis shows that the name of the pretty little nerite, *Nerita lineata* Gmelin, 1791 from the Indo-Pacific area, has to be changed to *Nerita articulata* Gould, 1847. The name *Nerita lineata* had been used earlier by Müller in 1774 for a different species, and thus Gmelin's later name is unusable as a homonym. Gould's name, which used to be regarded as a later synonym of Gmelin's species, now turns out to be the earliest of the synonyms and thus is revived as the valid name. Another synonym is *Nerita birmanica* "Philippi" Troschel, 1871. The species is common in mangrove swamps from Burma to Samoa and the Philippines to northern Australia. In 1950 Joyce Allen in her popular AUSTRALIAN SHELLS called it the Lineated Nerite. Now it may be changed to the Articulated Nerite -- or maybe it won't. Tucker Abbott has often said that the popular names are less unstable than the scientific names.

MKJ

FROM THE MINUTES OF THE DECEMBER MEETING

The first shell to make its appearance on the day's program was an old-timer - about 100 million years or so - from near Wilmington, Delaware. It had been discovered during excavation for the second span of the Delaware Memorial Bridge. President Dorothy Raeihle, who displayed it, related how the extinct bivalve had been received by Robert J. L. Wagner who identified it as Exogyra costata Say of the Cretaceous period. The single valve, four inches across, suggests a heavy, shallow cornucopia.

The Shell-of-the-Month, thanks to another lucky find, was Tellina alternata. Dorothy and George Raeihle had, in November, found a beach at Jekyll Island, Ga. strewn with intact pairs, open and clean. They had brought enough to give a few to everyone present.

A visitor, Joseph Fernicola, of the New York Herpetological Society, then spoke on the threat of development on the Staten Island land that represents the State's only segment of the Atlantic Coastal Plain. He described its role as a wildlife area and archeological site, and urged members to write to legislators asking that it be made a State park. He distributed sheets listing the legislators, and a sample of a suggested letter. Mathilde Weingartner pointed out to Mr. Fernicola that he had not taken into consideration past and present efforts, to the same end, by other groups.

Acting on a report by Vice-President Frank Nelson, it was voted that the Club order, from the Franklin Mint, 100 specially designed medallions commemorating our 25th anniversary. Made of coin silver, they will sell at $3.00 each. Frank Nelson also announced that Hugh Porter, of the Institute of Marine Sciences, N.C., has indexed all articles on travel-collecting that have appeared in the NYSC NOTES.

The main speaker was David Schirokauer, a young man who has spent so much time in Japan with his family that he attended school there. Narrating to his series of excellent slide photos, he described something of his life there, but chiefly his collecting activities. He did his own collecting in several localities, most along the Kii Peninsula, and also bought shells from fishermen. His photos included both scenery and shell close-ups.

Milton Werner

NOTE REGARDING THE ORIGIN OF TURBINE ENGINES

The turbine engine, which today has come to power so much of man's works, including turbojet aircraft, was invented by Jean Victor Poncelet, and described in his "Dissertation on Hydraulic Wheels Having Curved Blades," (Memoires sur les roues hydrauliques à aubes courbes, 1826). The inventor together with a M. Burdin, who reduced his idea to actual practice, noticed an interesting fact about their engine's wheels. Being men of science, which in the days before narrow specialization meant that they were familiar with the natural sciences as well as with their own engineering sciences, they noticed that the blades of the wheels somewhat resembled the mollusks of the family Turbinidae. Therefore they named their invention the turbine. This shows that although mollusks don't fly, their namesakes do.

Wm. Donald Kuntz

BOOK REVIEWS

SHELLS OF NEW GUINEA AND THE CENTRAL INDO-PACIFIC by Alan Hinton, 1972, Robert Brown and Associates, Port Moresby, New Guinea, and Jacaranda Press, Milton, Queensland. Price in U.S., about $7.50. 94 pages. This excellent handbook deals with shells of Melanesia and the Western Pacific. The book is large format - 7 3/4 X 10 1/4"- reminiscent of those by Maxwell Smith published about two decades ago. However, all shells are illustrated in full color, and, for convenience, the descriptive text is on the page facing the illustration of a given species.

As in several recent books, it is restricted to selected gastropods, with emphasis on the most popular genera, viz: Strombus, Lambis, Cymatium, Bursa, Cassis, Tonna, Cypraea, Murex, Thais, Drupa, Harpa, Mitra, Terebra, Oliva, Voluta, and the turrids.

Fourteen plates are devoted to Conus, which is one of the most exhaustive treatments of this group in any recent book. Furthermore, growth series, variations, and color forms of many species are given. Therefore, the collector is not limited to one illustration of a variable species.

A few misidentifications and misspellings were noted. Considering the distances involved, with author in New Guinea, publisher in Queensland, and printer in Hong Kong, these typos are not surprising. This book is highly recommended for the student of Indo-Pacific mollusks.

William E. Old

SEASHELL PARADE by A. Gordon Melvin, 1973, Charles Tuttle Company, Vermont. 369 pp., 75 plates, 1 in color. Price $11.50.

This book consists of a number of quite charmingly written chapters - many of which appeared previously in HOBBY MAGAZINE -- dealing with various aspects of mollusks and the shell-collecting hobby. However, it is badly marred by all sorts of errors of fact, nomenclature, and even shell name etymology. In many cases wrong authors are assigned to species and rejected names are frequently used. Some absurd statements could easily have been checked: that cone shells bore into the shells of other mollusks to get their food (p. 91); and that the infestation of Teredo in San Francisco Bay in 1921 resulted from "heavy rains which reduced the salinity" (p. 149) -- when the very opposite is the truth. There are many similar statements, some quite metaphysically incomprehensible: Discussing the formation of the shell spiral, Dr. Melvin writes, "..it could hardly fail to become clear that there is a spiral-forming force operating to move the living being through time and space" (p. 170). Nevertheless, this well bound and nicely illustrated book can make for some very satisfying reading -- one whole chapter is devoted to talented NYSC member Ethelyn Woodlock. But as far as sound scientific knowledge is concerned, caveat lector!

This book should provide an interesting and in some ways a curious addition to a shell library. Of course, each reader will have to decide if it is worth the rather high price asked for it.

M. K. Jacobson

MOLLUSCA IN SOIL FORMATION PROCESSES

Land prosobranchia play a part in soil formation, especially in the initial invasion of rock soils, although they do not remain permanently in the soil. In the Alps and the southern European mountains there are members of the genus "Pomatias" which in moist weather feed on the algal cover of rock walls, and in dry conditions withdraw into fissures. There they also deposit their excrement which in its turn serves as substrate and manure for higher plants, the presence of which is thus made possible. Here and there on rocky ledges in warm moist positions, the much smaller Acme polita can be active in a similar manner.

Those snails which participate in the initial invasion of rock soils form a special group. In middle Europe there are particularly Chondrina avenacea, Chondrina clienta and Pyramidula rupestris. The main food of these snails is endolithic lichens, e.g. Verrucaria species which sink their thallus into the top layers of limestone rocks by dissolving out the rock. The thallus extends horizontally for several millimeters beneath the rock surface and is connected to the surface only by narrow channels. The radula of the snails mentioned is capable of scraping off the superficial rock layer and exposing the gonidial layer and the oil hyphae of the lichen which are preferred as food. The snails are only active however in wet weather and withdraw into cracks in dry periods where they also deposit their droppings consisting of chalk granules and fallen out radula teeth and undigested lichen residues. This forms a favorable subsoil for moss and schizophytes. From this it follows that the snails mentioned are of great significance in the colonization of rock surfaces and so they contribute essentially to soil formation. A snail Campylaea (Vidovicia) coerulans of the Dalmatian mountains is active in a quite similar manner, the radula of which resembles that of Chondrina, although it differs markedly from that of related species which have a different mode of life.

From: SOIL BIOLOGY by Wilhelm Kühnelt, Rodale Books, Inc.,
Emmaus, Pennsylvania 1961, p 90 ff.

ARTICLE OF THE MONTH

"Underwater observations on tracks of dredges and trawls and some effects of dredging on a scallop ground" is the title of an interesting article by J. F. Caddy in the Journal of the Fisheries Research Board of Canada, 30: 173-180, February, 1973. Using a submersible in Chaleur Bay (Gulf of St. Lawrence) he observed that scallop dredging lifts fine sediment into suspension, burying gravel and sand, overturns large rocks, roughening the bottom. The inshore Alberton dredge is inefficient and dredging causes appreciable lethal and sublethal damage to scallops left in the track. 13-17% per tow was recorded for incidental mortalities with an offshore dredge. Predatory fish and crabs were attracted to the dredge tracks in densities three to thirty times that outside the track.

Henry D. Russell

FROM THE MAIL BAG:

ON MAILING SHELLS FROM THE PHILIPPINES

Dear Mr. Katsaras,

I don't know how I could ever explain to you about the conditions that existed in our place due to the martial law and the delay in sending you the box of shells. When I received your letter, right then and there I packed a box and then went to the post office to have it mailed. But our postmaster does not accept a box without the necessary auxiliary invoice and the customs declaration card. What I did was to ask information on how to secure the auxiliary invoice. I was told to go to the office of the fishery station which is three hours by boat to the nearest municipal town. When I arrived at the said office I was told that the fishery officer had been called to the central office at Manila in order to answer some charges against him and there was no other officer to act in his place. So I have to await the return of said officer. Imagine, it took me almost seven months to wait. I unpacked and repacked the box and replaced new shells over and over again. Then I was able to secure a copy of the auxiliary invoice and have it copied. Because of the absence of the fishery officer, I wanted to swear the invoice before our justice of the peace but still I was unlucky as our incumbent judge was also under arrest for immorality. Because of the delay I am still thankful that our present martial law had done good to us. Crooked gov't officials were either separated from the service or some were put to jail. That is why after anxiously waiting we have now a new fishery officer and I went again purposely to his office and introduced myself to him. I was even promised that every time I have invoices to be signed by him, immediately they would be returned to me. So at this time I ask your apology of the delay and last Oct. 17 I mailed a trial box to you.

Very sincerely

(Correspondent's name withheld)

FROM A LETTER BY KATHY TO THE CORRESPONDING SECRETARY OF THE AMERICAN MALACOLOGICAL UNION:

Dear Secretary,

I've never wrote a letter like this before. So I hope I'm doing it right.

Well, what I wanted to ask you, is, what do clams eat? You see, I went down to the beach and found a clam alive. And also, how and where can I get the food?

Please hurry because I don't want my clam to die.

(Editor's note: We don't know the rest of the story, and can only hope that it had a satisfactory ending. May Kathy's interest continue, and grow. In a few years we'll begin to look for her at the AMU meetings. ---DR)

NYSC NOTES NUMBER 199 FEBRUARY 1974

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FOUNDED JAN. 1949

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These NOTES are distributed by mail to all members of the NEW YORK SHELL CLUB, Inc. Dues: Full membership $4.00 per year, $1.50 additional for each of other members of the same family -- with one copy of NOTES per family. Corresponding membership $2.50 per year. A limited number of back issues of the NOTES are available at $.30 postpaid per single copy; also bulk rates. Items and articles for publication in the NOTES should be sent to the Editor. The Corresponding Secretary should be notified promptly of any change in your address.

The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, in

ROOM 319, AMERICAN MUSEUM OF NATURAL HISTORY

NEXT MEETING: SUNDAY, MARCH 10, 1974, at 2:00 P.M.

PROGRAM: THE AMERIPAGOS EXPEDITION (with color slides)
by William E. Old

THE GENUS PTERYNOTUS (with color slides)
by Robert Janowsky

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COMING EVENTS

MARCH 2nd, 1974: The American Littoral Society will hold its sixth symposium on "Your Future in the Sea" at Hunter College, Park Ave. at 69th Street, New York City. For further information and tickets (Non-members: afternoon $3.00, evening $4.00, combined $6.00) write to American Littoral Society, Sandy Hook, Highlands, New Jersey 07732. (Phone: 201/872-0200)

APRIL 21st, 1974: ANNUAL SHELL-SOCIAL OF THE NEW YORK SHELL CLUB. Our annual party will be held at the Broadway Dance Studio, 31-08 Broadway, Astoria -- by courtesy of our member Dorothy Jensen. Save your extra shells for the auction! Literature and other shell-associated items are also wanted. So are those home baked cakes!

JUNE: (the date to be decided) is the month for our annual field trip and outing. Please let us know if you have a preference for a particular area and -- in view of the gasoline situation -- your ideas on how to get there.

THE JAMAICA BAY WILDLIFE AREA is a part of the Gateway Project. Individuals may obtain permits to enter the Raunt and Wildlife Area by writing to: Director of Maintenance and Operation,
New York City Parks, Recreational & Cultural Affairs
Administration
830 Fifth Avenue
New York, New York 10021

Access to the beach is not included in these permits. Permits must be renewed each year. There is no charge.

THE QUESTION BOX is returning. Put your questions in the box before the meetings (you may remain anonymous if you wish). The questions will be answered or discussed from the floor.

MORE ON THE HISTORY OF THE NEW YORK SHELL CLUB

The first of the Club's annual field trips and outings was held at Douglaston, Long Island, and was reported in issue No. 1 of the NEW YORK SHELL CLUB NOTES. In succeeding years marine, land, and freshwater areas have been explored, but in later years almost all of the field trips have been for marine collecting. The trips are planned for areas to reach and return in one day, except for the week-end trip to Cape Cod in 1969. Some of the earlier-visited areas have fallen to progress and/or pollution and so, although one hears complaints of "going to the same old place," Orient Beach State Park still offers the best of Long Island areas available for shelling.

Finds and observations made on these field trips and on field trips by individuals have added to the knowledge of the local fauna, including the listing of species formerly overlooked. One of the most unusual finds was that of fresh dead, giant specimens of Haminoea solitaria Say, a form unreported for about 100 years (see NOTES 137, p. 7). Another snail unreported locally for many years was the tiny freshwater Micromenetus dilatatus Gould, found living in a stream near Sag Harbor early in 1971 and identified for us by Dr. Harold Walter. The finding of live Anachis translirata in Gardiner's Bay was also an exciting verification of early records. Several species, brought home alive from various field trips, were kept in aquaria for observation of their habits, food, and sometimes their reproduction. Even though most of the information gained was already in the literature, the understanding and the number of new observations make such projects definitely worthwhile. Most of these finds and observations have been reported in the Club's NOTES. All should have been, as we feel that each member has at least a bit of knowledge that is unknown to the majority of us.

The NEW YORK SHELL CLUB NOTES is the oldest existing of the publications put out by various shell clubs. Its aim is to have original reports supplemented by material of importance which is not readily available to club members, with the added service of book reviews and other pertinent information. The NOTES were initiated by Karl Jacobson who at present is again acting as editor.

The Club's library has a good variety of books, periodicals and papers which are housed in the American Museum, convenient to our librarian, Harold Feinberg. Attending members borrow for one month material they request a week in advance of a meeting.

Over the years, members in groups or as individuals have created public interest by setting up exhibits, some large, some modest, in schools and libraries. The Club's first shell show was a noncompetitive exhibition -- informative, educational, and beautiful. It was held in April 1973 at the Bergen Community Museum in Paramus, New Jersey, and brought into being chiefly through the enthusiasm of Dorothy Germer with other New Jersey members and past-president William E. Old. The show drew so much interest that a group of Jerseyites have since formed the New Jersey Shell Club.

Our annual shell social combines shells for sale at bargain prices, shells for auction, a presentation with color slides or sometimes a movie, with refreshments, buffet supper topped with home-made cakes, and the well-taken opportunity for members to become better acquaint-

ed. (At one social four members delightedly discovered that they had a common second language -- Russian.) All material is donated, and the proceeds of the sales, after expenses, go to replenish the treasury in anticipation of expenses for the coming year. These include the costs of bringing to the Club guest speakers, professionals who bring to us studies on mollusks and by doing so enrich our knowledge and incidentally give us a lesson on how to study. The annual parties are currently held on the premises of the Broadway Dance Studio, Astoria, through the courtesy of our member, Dorothy Jensen. Our next one is scheduled for Sunday, April 21st.

The New York Shell Club is not a closed society. Anyone interested in the Mollusca may become a member, and visitors are always welcome, on field trips as well as at monthly meetings. We are privileged to meet at the American Museum of Natural History because of its aid to education policies, and we are grateful. Our membership has increased fifteen-fold since late 1949 when the first membership roster was printed in NOTES No. 1. And it all started with wondering about a shell.

Dorothy Raeihle

FROM THE MINUTES OF THE 25th ANNIVERSARY MEETING

The January meeting was our 225th, and our silver anniversary meeting, as well. The special features of the observance were a social hour preceding the meeting, reminiscences by the Club's two founders, and the presence of Tony D'Attilio, who had been invited to come in from San Diego to be our speaker.

For an hour before the opening of the meeting, the 80 members and guests present chatted over coffee and pastry, keeping Rose and Tony D'Attilio busy repeating the highlights of their "new life" on the west coast.

The first item of "anniversary business" was the introduction, by President Dorothy Raeihle, of the man who started it all, Dr. Walter Jacobs. Together with co-founder Karl Jacobson he recalled how his inquiry at the American Museum about the possible existence of a shell club in the City had led him to the American Malacological Union and thence to Karl Jacobson. He and Karl then told how they had arranged their first encounter and how they decided on and planned the new venture.

Dr. Jacobs had with him a bound set of the earliest minutes. After reading from the record of the first meeting, he presented the volume to Mrs. Raeihle, for the Club's archives. Dorothy then introduced the past presidents, ten of whom were present. While they were gathering for a group photograph, Karl took the occasion to express the Club's appreciation to Dorothy and George Raeihle and many others who have worked hard and long for the welfare of the organization.

Twelfth president Dorothy Raeihle then turned the chair over to the Club's first president, Karl Jacobson who, after brief reminiscences, introduced Tony D'Attilio. In a prelude to his major presentation, Tony showed slides picturing his shelling associates, amateur and professional, in the San Diego Shell Club and the Western Society of Malacologists. Tony, a Charter and Life member, also noted that un-

til moving west, he had not missed a meeting in 20 years. Mathilde Weingartner, a first-year member, recalled that artist D'Attilio had created the club emblem. Nick Katsaras mentioned that he hasn't missed a meeting since he joined in November 1949. Ed Cowles was introduced as still another of the first-year members.

Tony then gave his presentation on "The Morphology of the Typhinae." He described this muricid subfamily as one that is notable for its intricate shell features, whose delicacy is all the more striking in view of the size range of the shells - $\frac{1}{4}$ to $1\frac{1}{2}$ inches. The family is presently seen as having about 15 genera and 45 species, but classification is, in many instances, arbitrary and controversial in this difficult group. Tony illustrated his remarks with beautiful photographs and even more explicit drawings.

Milton Werner, Rec. Sec'y

DISCORD IN PARADISE, I.

Morris K. Jacobson

Among other things that distinguish our effete days from the vigorous days of the "good old times" is the reluctance on the part of modern day malacologists to engage in lusty, rough-and-tumble scientific disputes with their colleagues. It is true that some sprightly exchanges of arms do occur -- but only rarely -- during the more strenuous moments of a debate at a professional convention. And in private discussions even stronger pejorative language is often used regarding a colleague with an opposing opinion. But the modern writer is loath to entrust intemperate language to the imperishable pages of the literary record. He believes, apparently, with Linné who, as Isaac Disraeli (the father of Benjamin Disraeli, eminent English novelist and statesman) reported in his delightful work, "Curiosities of Literature": "In Science, Linnaeus had a dread of controversy -- conqueror or conquered, we cannot escape without disgrace."

But this was not true of the older generations. Vehement exchanges of unsavory compliments were not rare. Hotly held opinions were supported by biting -- if not always pertinent -- remarks indicating disapproval of the opponent's methods of work, paucity of factual information, faulty conclusions, and general ineptness in the field.

The Editor has come across a few such vigorous passages of arms in his perusal of the literature and thinks that perhaps the readers should find them entertaining. No harm, of course, is intended; it is all done in the spirit of good clean fun. The combatants have all be long gathered to their fathers and cannot take umbrage at these disclosures, and we trust that if their spirits are listening, they will realize that they are by now far beyond the range of all human censure.

One such debate took place between the English writer Edgar A. Smith of the British Museum (Natural History) and John Ford of the Academy of Natural Sciences of Philadelphia in 1893. The debate, as will be seen, had definite nationalistic overtones and involved the proper use of inverted commas or internal quotation marks.

It began with Smith's summary rejection of the latter's new species, Cypraea greegori, during which he made a snide reference to the "new French school" who might agree with Mr. Ford. Mr. Smith was glad to say that in England, and he hoped in America also, "the ideas are not so advanced(?)." He pointed out that in overlooking Melville's earlier comments on this form, Ford had not quite acted cricket. "Right and justice (and even courtesy) /original emphasis/ at once direct us in the present case." And now the wiser representative of the Mother Country undertook to admonish the erring colonial offspring: "Although examples of this shell have been in the national collection for more than 50 years, no British author has ever suggested that they belong to a different species." (NAUTILUS 7:64).

This solemn reference to "British authors" did not overawe Ford, as presumably it was meant to do. Rather the opposite took place and he struck back stoutly albeit a bit erratically. It is true, he stated in effect, that in England the mollusk was not considered worthy of species rank, but "nearly all these years were required for 'British authors' /his commas/ to find them worthy even of varietal distinction." Here he made valid and probably effective use of the inverted commas, but suddenly he lets the device run wild. "In view of this 'state of things', it is not at all surprising that Mr. Smith should consider it a 'bit of presumption' for an American student having less than one year's knowledge of the shells, to attempt to lift them above the plane of varietal controversy....In conclusion it might be well to add, that Mr. Smith's....reminder of my lack of courtesy, is wholly gratuitous and therefore does not call for comment. In the interest of peace, however, it is accepted 'with thanks' and filed for future courteous consideration." (ibid. 7:79,81). Smith objected vigorously, among other things, to this unfair use of inverted commas, since it made the reader consider them to be quotations from his remarks, which of course they were not. Ford's answer would be surprising to grammarians. He calmly stated that the phrases thus decorated, "pathetically alluded to" by Mr. Smith, are used "simply as evidence of their general use." Smith had also written that, "It were easy to take Mr. Ford's paragraph seriatim and to confute them, but I value the pages of The Nautilus too highly to occupy them with matter of that description." (ibid. 7:102). In a paragraph hopefully entitled "Some Final Remarks Relative to C. greegori," Ford answered in this manner: In respect to this show of confidence the latter refers the former to the 'not very classic, but rather trite saying,' /commas again!/ viz., 'The man who is always sure that he could have managed things better had he been there, is usually the one who never gets there.'" (ibid. 7:130). The final comment in this debate, which was rapidly degenerating, appeared in the Journal of Malacology (vol. 3, p. 40). "Mr. Ford is evidently of the opinion that rude personalities strengthen his argument. Such trivial and childish nonsense reflects no credit on the writer, editor, or paper." One had to breathe a sigh of relief that this really put an end to the matter.

PS. Joyce Allen in her book on living cowries (1956) makes Cypraea greegori (which she spells gregori) a subspecies of C. coloba Melville, 1888. C. W. Johnson in 1904 (NAUTILUS 18:96) made it a simple synonym.

SANIBEL -- STRESS AND RECOVERY

Most of the shelling at Sanibel and Captiva Islands, off the west coast of Florida, is on the wide Gulf beach, where multitudes of shells, many alive, are cast ashore after storms. But in the bays and passes uncounted colonies of many species of mollusks become established, thrive and breed.

In June of 1972 a hurricane struck these islands and during the storm masses of sand were shifted, eroding Captiva's main north-south road and breaching its southern stretch of barrier beach which shields Sanibel from the open Gulf for a stretch of about three miles. The breach opposite the Sanibel-Captiva bridge was at first slight -- strollers could step across at low tide -- but it gradually widened and deepened until in September the full strength of Gulf tides crashed through, scouring the formerly quiet Blind Pass, south of the bridge, into a channel for the fast flow of tidal waters and sweeping away many colonies stationed inside Turner's Beach. The areas and mud flats on the north side of the bridge were affected to a lesser degree.

Visiting the islands in November of 1972 we found the Coon Oysters (*Ostrea frons*) wiped out and *Crassostrea* and eel grass struggling to make a comeback. On the north side of the bridge, in mud and near the mangroves, there were a few scattered Crowns (*Melongena corona*). We wondered what they found to eat. In San Carlos Bay we found a colony of Chitons (*Chaetopleura apiculata*), one *Seila adamsi* and one *Prunum apicinum*, the latter clinging in a broken shell in swift water over a hard substrate -- a situation not normal for this Marginella. In all our shelling we found *not one* specimen of living *Batillaria minima* or of the common *Nassarius*. It was in Tarpon Bay that the young eel grass was evident, and there were some live oysters in the extensive beds. Here we found no live *Melongena* (formerly plentiful) but on one clump of slender grasses there was a number of juvenile *Bittium*.

Although later news indicated that the colonies were gradually being reestablished, we had no first-hand report of the area until we received the following letter from Sandra Hunter telling of her observations in August, 1973. The inclusion in her list of the vulnerable *Haminoea* and *Isognomon* is an encouraging note in the story of the mollusks' return.

Dorothy Raeihle

* * *

January 28, 1974

Dear Mrs. Raeihle:

You had expressed an interest in what I had seen "live" at Sanibel last summer, and I hope this is of interest. Mrs. Quigley, our member from Omaha, and I were in Sanibel from August 20 to 22, 1973.

A Gulf beach about mid-Sanibel:
Noetia ponderosa Say. We found only one which was washing around at the water's edge -- probably already moribund.

Bowman's Beach:
Donax variabilis Say. These were very abundant. By picking up

seaweeds we exposed masses of them which stuck out of the sand just a little.

Captiva Island on the bay side:
Crepidula convexa Say
Anachis avara Say

I found only one of each. They were in knee-deep water on eel grass. The water in the bay was much clearer than in the Gulf. I was just deciding whether or not to try a little snorkeling when a large grey shape broke the surface about 20 yards down the shore in about the same depth water as I was standing in. Happily, the "shape" was a dolphin who went diving and blowing off down the bay. However, my enthusiasm for snorkeling was dampened by the idea that something that big needed so little depth.

Blind Pass:
Isognomon bicolor C. B. Adams
Haminoea antillarum Orbigny
Prunum apicinum Menke
Melongena corona Gmelin
Dentalium sp?
Fasciolaria hunteria Perry
Busycon contrarium Conrad

Imagine you are standing with your back to the Gulf. On the left side of the Pass is a deep swift channel which is not shallow enough to wade even at low tide. Beyond the bridge on the left are mangroves; the Isognomon live on their roots, and all kinds of bugs live above the roots. Beyond the bridge and branching off to the right at about a forty-five degree angle from the main channel is a smaller channel. This channel gets shallow enough to wade about an hour before low tide -- also clear enough. I was never too happy about wading it because of the fisherman I heard muttering about something biting through his monofilament line. But I guess "fear is a dirty word to the intrepid mud-flatter," and there is a beautiful mud flat across the small channel. The first part of the flat is rather sandy, but just beyond the sand is lovely oozy mud. This is the home of abundant Melongena, Haminoea, and Prunum. The Dentalium I found clutched in the foot of a Melongena. Near the main channel there are weeds; that is where someone found Fasciolaria and Busycon -- I wish it had been me!

Sincerely,
Sandy Hunter

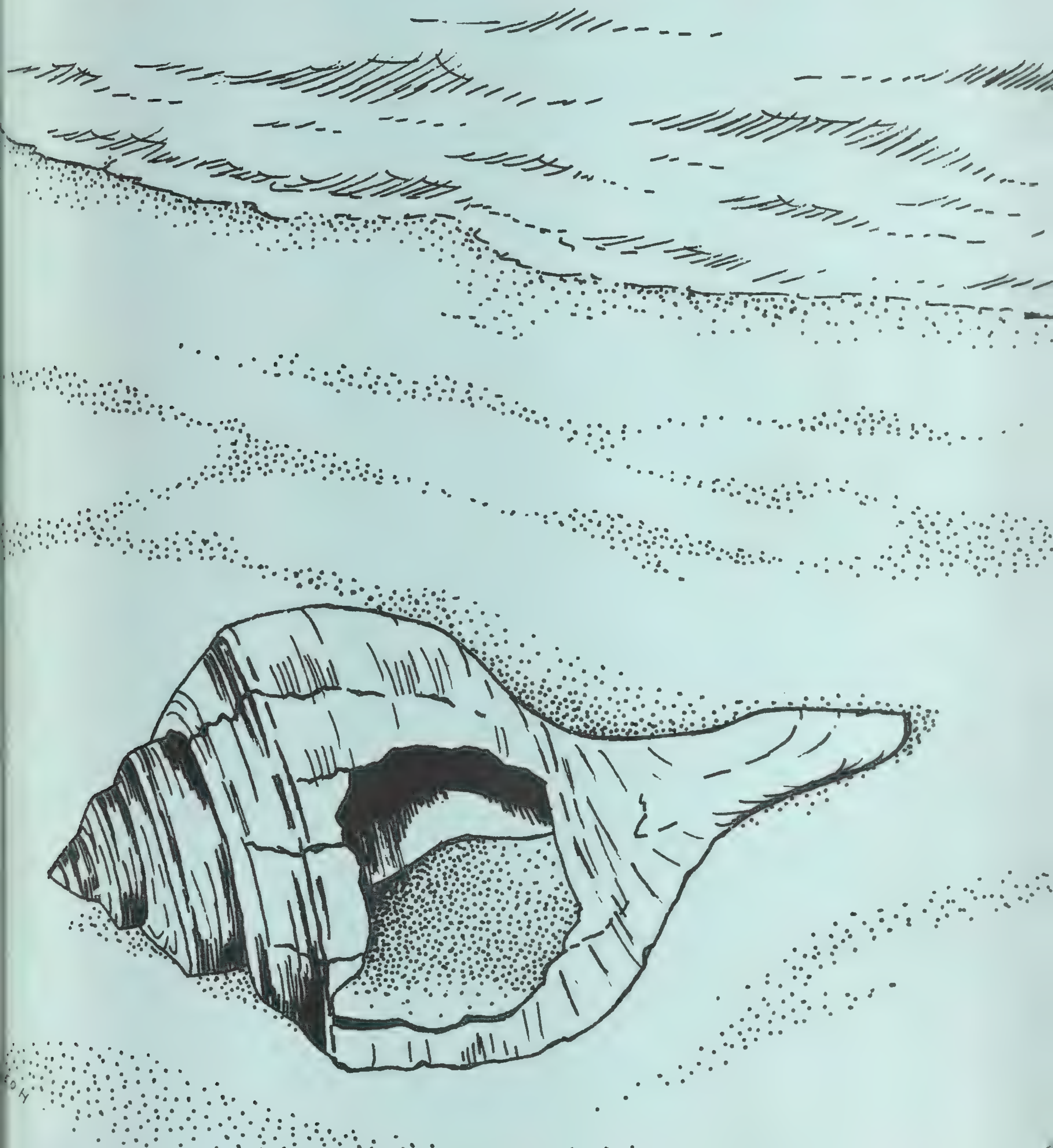
ARTICLE OF THE MONTH

A delightful article by Dr. Donald J. Zinn entitled, "Crabs in your mussels" appeared in MARITIMES 17: 16-17, 1973. These pea crabs at different parts of the coast of the United States inhabit not only oysters and mussels, but, according to the crab species, worm tubes, shrimp burrows, gill baskets of sea squirts, undersides of cake urchins, paper clams and keyhole limpets. They are not harmful and are considered a great gustatorial delicacy in several parts of the world. He gives a tasty recipe, including chopped mushroom caps, sherry, butter, salt, cayenne pepper, nutmeg, egg yolks, brandy and heavy cream.

Henry D. Russell

200th Issue

NEW YORK SHELL CLUB NOTES MARCH 1974



THE NEW YORK SHELL CLUB was founded January 30, 1949 by Walter H. Jacobs and Morris K. Jacobson, its purpose to engage in and promote the study of molluscs.

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The NEW YORK SHELL CLUB meets on the second Sunday of each month, September through June, Room 319 of THE AMERICAN MUSEUM OF NATURAL HISTORY, with the following exception:

NEXT MEETING: SUNDAY, APRIL 21, 1974, at 2:00 PM *

THE PLACE: BROADWAY DANCE STUDIO (Phone: AS.4-1503)
31-08 Broadway
Astoria (Queens), New York 11102

PROGRAM: ANNUAL SHELL-SOCIAL:

AUCTION - BARGAIN TABLES - DOOR PRIZE - RAFFLE

CAMERA CLOSE-UPS OF LIVE MOLLUSKS (Color slide presentation) by GEORGE RAEIHLE

COCKTAIL HOUR - PUNCH - BUFFET SUPPER - CAKES AS ONLY OUR LADIES CAN MAKE THEM !

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SHELL-SOCIAL APRIL 21st:

* Doors will be open at 12:30 PM so you may bring your donations of shells and related items early enough to be put on display. No item is too large or too small to be welcome. This is the place for all those extras you haven't known just what to do with. And, ladies, we're really looking forward to those cakes!

Seashells Unlimited, 590 Third Ave., is donating a fine book for the raffle. The door prize will be a surprise.

We are again indebted to Dorothy Jensen for the use of her studio for our party. The Broadway Dance Studio is easily reached by BMT subway, ASTORIA line, to the BROADWAY stop which is at the corner of Broadway and 31st Street. If you still have questions you may phone 639-2559 (Raeihle) and we'll try to help you.

The donation at the door has been fixed for members and their guests at $3.50 per adult, with $1.75 for each child 12 years or younger. This is the first bargain of the afternoon. Come -- with your donations and your enthusiasm!

COMING EVENTS: We are pleased to announce that Dr. R. Tucker Abbott will be our guest speaker at our meeting of May 12th.

A TRIBUTE TO A CONCHOLOGICAL BICENTENARY

The flourishing of our science of malacology is due in large measure to the amazing enthusiasm and devotion to the field shown by students, shell connoisseurs and private collectors. Behind every museum or university research laboratory is a history of financial support and donations of specimens and observations by amateurs.

Probably no other shell club publication has done more to encourage and help the community of mollusk lovers than has the New York Shell Club Notes. For 25 years it has gone out to several hundred grateful subscribers. Two hundred issues of the NYSC Notes have now guided, inspired and educated an entire generation of conchologists.

On this occasion of the Silver Jubilee of the Notes and its Bicentenary Issue, the international shell world, both professional and amateur, expresses its thanks and offers its congratulations to the many people who have worked so long and so hard to keep this publication alive and vigorous. May the next hundred issues be as wonderful!

R. Tucker Abbott
(for every subscriber)

HISTORICAL NOTES ON THE NOTES

Morris K. Jacobson

The first issue of the NOTES came to be in this manner: I had been working in a sign painter's shop while an undergraduate. One of our customers was unable to pay his bill and went broke. In the distribution of his assets, my sign painter boss was left a small, primitive mimeo machine and a small supply of paper and ink. When I left his employ after graduation, he rewarded my faithfulness with the machine since he couldn't get it to work properly and didn't need it anyway. It stayed in my attic for about ten years and was finally put to use in December 1949 when No. 1 of the NOTES rolled off its press. Thus if I hadn't painted a sign and if the customer had not gone broke, there could very well have been no NOTES, at least in 1949.

The numbers appeared irregularly at rather brief intervals -- as long as the paper and ink lasted. There was, however, so long a gap after No. 5 (October 1951), that the succeeding issue (March 1952) was mistakenly designated No. 7. The editor, typist, runner-offer, assembler, addresser, and mailer had all of them forgotten that no No. 6 had appeared.

Other numbers appeared thus listlessly until No. 9 (November 1954) when Dr. and Mrs. Wisoff bought the club a splendid new machine and all the paper and ink needed. The NOTES now began to appear more regularly and more frequently. In 1955 and 1956 nine numbers appeared; after that they were increased to the present ten. The Wisoff machine worked fine for a while and then, like all gadgets, became temperamental. In November 1959 a new machine was purchased and delivered to the home of Anthony D'Attilio in Valley Stream; we paid cash, reducing the treasury to $2. We remember, because we had to take turns collecting for money paid out for stamps, envelopes,

paper, etc. until Miss Weingartner collected dues. By now a lively group of workers assembled monthly at Tony's to "get out the NOTES." When Tony moved from Valley Stream, the NOTES and the labor-gang transferred to Grace McDougall's basement in New Hyde Park. When she moved to Florida, it was a "new" (actually a reconditioned) machine that completed the circle and went back to Karl Jacobson's in Rockaway. On KJ's retirement, Frank Nelson volunteered to set it up in the attic of his newly purchased home in Richmond Hill, where it was moved in November 1973.

Efficiency was greatly increased when Grace obtained at a minimum expenditure some addressograph equipment from her office. Before that all addressing had been done by hand by Josephine Wichern. But she had to give up when the number of subscribers rose to 200. Many other people worked getting out the NOTES, too long a list to be included here. But if the author of this report founded the periodical, he is the first to admit that if it were not for the skill, devotion, meticulous attention to detail, and initiative of Dorothy Raeihle -- with the expert assistance of George Raeihle -- not only would the NOTES not have been as good as they were; they might very well not even have survived at all.

Many others also helped by contributing items to the paper. One of the most indefatigable was Tony D'Attilio, whose beautifully illustrated series called "Some Rarer Shells" and frequent articles on Conus and Murex did much to enrich the pages of the early NOTES. In recognition of this work, we are reprinting one of his earlier articles which tells of his connection with the vast Calvert Collection of shells and minerals. (See page 5.)

FROM THE MINUTES OF THE FEBRUARY MEETING

Following the introduction of six new members, and the reading of the minutes of the January (25th anniversary) meeting, the recording secretary was asked to go back 25 years by reading the minutes of the Club's second meeting. This report, signed by the co-founder and first secretary, Dr. Walter Jacobs, was read from the bound volume of early minutes that he had presented to the Club at the anniversary meeting.

Historian Nick Katsaras pointed out that though he had not joined the Club before November 1949, he had not missed a single meeting since and hence is, without doubt, the one who has attended most meetings in the history of the Club. This faithfulness was rewarded by the audience with a round of applause.

President Dorothy Raeihle read a clipping reporting consternation in Sydney, Australia, at the discovery of six Achatina fulica on shipping pallets that had come in from Papua, New Guinea. In the future, cargoes from Papua will be subjected to fumigation.

Mathilde Weingartner presented a brief series of slides, with comment, on the subject of variation in shell forms and sculpture. Perhaps to reveal who was awake, she chose as her last few shells a crustacean, a turtle, eggs, a nut, and two 12-gauge (expended).

The invited speaker was Maxwell Cohen, chairman of the Department of

Biology, Beach Channel (Queens, N.Y.) High School. His subject, "Evolution of a Beach," was especially pertinent in that the beaches of the Rockaways have been diminishing rapidly over the last few years. Wave action through the current winter has, in places, removed the last of the sand from between water and boardwalk. Mr. Cohen agrees with those who feel that attempts to preserve beaches by pitting feats of engineering against the forces of nature are futile. He gave some appreciation of nature's might by referring back to the most recent glacial periods, explaining how glaciers had created the terrain of the New York City area, including the many rivers that once flowed to Long Island's south shore. Carrying glacial sand, they supplied the material with which the Atlantic surf created the barrier beach off this shore. This is the beach that is now being washed away. Man has had some influence on the process, but it is negative. He has blocked the rivers, so there is no longer a supply of new sand. In pointing up nature's superiority as a builder and remover, Mr. Cohen noted that maps of 1524 (Verrazano) and 1613 (Adrian Block) show no barrier beach. A map of 1734 shows one nearly the length of the Rockaways. Today, it is inhabited by hundreds of thousands. Tomorrow, despite frantic groin-building and dredging, it will be what nature makes it.

Milton Werner, Rec. Sec'y

To the Editor, NYSC NOTES:

Coincidence is an interesting - coincidence. Last week while searching for a reference to something quite different, I came upon a review of Melvin's "Seashells of the World (With Values)" which I had done six or seven years ago, for "Science on the March," the bimonthly publication of Buffalo Museum of Science. It read, in part,

".... Dr. Melvin disclaims being other than amateur, and some of his descriptive phrases bear out the statement: 'long spines separating into deer horns; about six unusual high frills converge to a point and bend; body circled with dots and hyphens; inner and outer teeth in lip!' .... a three-page list of books relating to the science will be helpful, but again one must challenge the author's flat statement that one is the only available book on cowries, another the only one available on land shells."

An hour later a neighbor, having stopped on joint behalf at the post office, delivered the current issue of NYSCN. And so I learn that Dr. Melvin has published yet another book and, according to the review, in as charmingly careless a fashion as he did the earlier one.

Nothing can be done, I suppose, but too much of such irresponsible literature is coming on the market. If only it is accepted for entertainment value, well and good. It should, however, be banned from the reference shelves of all public and private libraries.

Margaret C. Teskey

OUR COVER

We thank Leonardo Hernandez for designing the special cover for this issue.

The following article is reprinted from NYSC NOTES No. 2, Jan. 1950:

SOME NOTES ON THE GREAT CALVERT SHELL COLLECTION

by Anthony D'Attilio

(Read at the November 16, 1949 meeting of the N Y S C)

My interest in shell collecting began in 1936. I lived several blocks south of the Museum of Natural History and at every opportunity I would find myself there in the shell hall. (Now unfortunately gone -- Editor's Note). After studying the shells for a while, it was my habit to go to the bookshop. Miss Mack, who was in charge then, was quite friendly and in time I got around to being something of a help to her by labelling some of the shells she acquired for sale in the bookshop. In the meantime, through my shell purchases from dealers over a period of several years, I became a little proficient in judging the commercial value of shells. This of course applied to those shells in demand by collectors, mainly.

In the early part of 1939 Miss Mack asked me one day if I wanted to help out a dealer who was to bring over a large collection from England. The dealer was a specialist in minerals and needed some help to familiarize himself with shells. Eventually I was introduced to Mr. Martin Ehrman and told something about the Calvert Collection. All this put me into quite an excited state of mind.

The Collection finally arrived in this country and Mr. Ehrman tried without success to interest the city of Baltimore in its purchase. The John Calvert who had been largely responsible for bringing the collection together was supposedly some relation to Lord Baltimore, for details of which see comments and references on the Calvert Collection in Sherborn's book "WHERE IS THE --- COLLECTION?"

It was evident that a number of collections had been assembled. Many shells had been purchased at the social functions that were auctions in those days. Those present at such auctions tried to spend as lavishly as possible not only to acquire the shells, but for the social prestige it brought them. Also, Calvert had outfitted a yacht, called the "Scout," for a collecting trip to the South Seas. There were shells from this expedition, a number of Hugh Cuming's duplicates, and shells purchased from some of the continental dealers. All together it required seven van loads to transport the Calvert Museum.

The shells upon reaching this country were stored in a sub-basement of the International Building in Radio City, in the same building where Mr. Ehrman had an office and show room for his mineral specimens. I will always remember the first time he took me down to that basement and the thrill as I saw that vast array of shells. Most of them, except those stored in a number of cabinets, were packed in 300 large cases. In turn these cases held smaller wooden boxes. These smaller boxes usually contained shells of one genus. It required 20 boxes or more to hold some genera that were numerous in species. It took 15 boxes to hold the mitres alone, for example.

After several attempts had failed to dispose of the collection as a whole, Mr. Ehrman finally decided to sell the contents piecemeal. I was at this moment called in and arrangements with Mr. Ehrman were

made. I consented to contribute my time, advice and other necessary help for the privilege of selecting shells for myself. You collectors will mostly agree that I could not have wanted it any better.

Also at this time I found out some details of how the collection happened to find its way here. The Calvert heirs or those in possession of the collection at the time had tried without success to dispose of it in England. When this failed the American Museum of Natural History had been approached. This information was made available to Miss Mack in the bookstore, who in turn interested Mr. Ehrman.

As shell enthusiasts followed one another in picking over the collection, it became a task to keep such a colossal amount of individual specimens, labels etc. in some semblance of order. At the same time I was familiarizing Mr. Ehrman with the monetary aspect of the more desirable species and genera. In order to move the less showy and smaller shells, Mr. Ehrman decided to dispose of these at ten cents a lot. A lot might consist of three or thirty shells, as long as they were in one tray or box. Many hundred dollars worth of such lots were sold. All this seemed to fail making even a dent in the size of the collection. As I recall, one incident stands vividly in my mind, perhaps with a pang. A fine cabinet of about 6 feet tall and 30 inches wide was completely filled with specimens of Conus. The drawers, a double row, were all covered with glass and contained conservatively about 3,000 specimens. One evening I came in and found the 3,000 cones spread all over tables and floors. Someone had purchased the cabinet alone!!

Sometime during the following year, 1940, Mr. Hugh Milliken, a retired gentleman, bought the remainder of the collection. I followed the shells and thereafter transferred my activities to 94th Street. A large unused greenhouse in that street was rented and the shells put on display. Mr. Milliken hired a salesgirl, got some publicity and many collectors made their appearance. There were still plenty of shells, too many for one man to digest for years. The landlord after some months wished to regain possession of the greenhouse and the collection was moved to a store on East 62nd Street. Although many choice shells were gone, there were still untouched boxes containing land shells, freshwater bivalves and univalves and marine bivalves in countless numbers.

Several months went by, perhaps close to a year, when Mr. Milliken decided to give up the store and bring the remaining shells to his apartment. I worked with him until 1942, during which time we amused ourselves with the shells and served an occasional collector. We also sent to the U.S. National Museum parcels containing large numbers of small shells in glass-topped boxes. They bought some and returned the remainder.

Eventually Mr. Milliken became quite ill, the collection was packed up and sent to Old Lyme, Connecticut, the home of his brother. At this point I took leave of the Calvert Collection. Several years ago the collection was bought by Mr. Heathcote Woolsey, and when I visited Mr. Woolsey, a familiar sight greeted my eyes which served to recall the small part I had played in the history and dispersal of the Great Calvert Collection.

* * *

As a footnote to the above article we give you these excerpts from SHELL COLLECTING, An Illustrated History, by S. Peter Dance (1966, University of California Press), pages 215 and 216:

> Sir David William Barclay (1804-1888) lived for several years in Mauritius and collected many rare marine shells there. He was a discriminating collector and it was difficult to find in his collection a specimen that was not in fine condition. Three years after his death a sale-catalogue was issued and the collection, arranged by (Hugh) Fulton, was put up to auction. The sale took place 6 to 9 July 1891 and was well attended, but despite the quality of the collection prices in general were low. ..... One of the principal purchasers at the Barclay sale was John Calvert, a mining engineer who devoted much of his time to collecting shells and other natural objects; he paid £54 16s. for eighty-one lots. In 1939 his huge collection of shells, minerals and fossils was bought, for about $20,000, by an American dealer who took several years to dispose of it. Today Calvert's shells may be seen in collections all over the United States.

(A few shells from the Calvert Collection will be among those to be offered at auction at our Shell-Social April 21st.)

PRELIMINARY CHECKLIST OF THE NUDIBRANCHS AND SACOGLOSSA OF LONG ISLAND

by Ron Rozsa
423 Taylor Ave., Patchogue, N.Y. 11772

Listed here are 14 species of nudibranchs and 2 species of sacoglossans from Long Island waters. I have been unable to identify 6 additional nudibranchs consisting of 2 dorid species and 4 eolid species. The dates, substrate, collection sites and collectors are listed below where known. The nudibranchs _Facelina bostoniensis_ (Northern New England), _Onchidoris aspera_ (Northern and Southern New England), _Onchidoris bilamellata_ (Northern and Southern New England) and _Polycerella davenportii_ (Southern New England) represent a southern extension in distribution according to Franz (1970). Most species are less than one centimeter in length except for the large nudibranch _Aeolidia papillosa_ which from local material reaches a length of six centimeters.

Smith (1964) was the main source for identifications since there are few copies of the standard reference by Alder and Hancock (1845-1855) available. The nomenclature follows that of Franz (1970). The nudibranchs collected by Roy Latham probably have been deposited in the New York State Museum at Albany. Most of the species of nudibranchs that I have collected are in my personal collection of invertebrates.

Order Sacoglossa

1. _Elysia catula_ (Gould 1870): Orient Point vicinity (Latham 1970).
2. _Elysia chlorotica_ (Gould 1870): Orient Point vicinity (Latham 1970); Ponquogue Bridge, Shinnecock, 7/14/70, on _Ulva lactuca_ (Rozsa).

Order Nudibranchia

1. *Acanthodoris pilosa* (Abildgaard 1789): Sunwood Beach, Stony Brook, 8/1/68 (Hechtel 1974).
2. *Aeolidia papillosa* (Linnaeus 1761): Ponquogue Bridge, Shinnecock, numerous reports by divers.
3. *Catriona aurantia* (Alder and Hancock 1842): East jetty at Moriches Inlet, 10/10/70 (Rozsa).
4. *Cratena pilata* (Gould 1870): Greenport (Smith 1860); Cold Spring Harbor (Balch 1899); East jetty at Moriches Inlet, 10/10/70 and 10/24/70 (Rozsa).
5. *Dendronotus frondosus* (Ascanius 1774): Orient Point vicinity (Latham 1970).
6. *Doridella obscura* (Verrill 1870): Cold Spring Harbor (Balch 1899); East jetty at Moriches Inlet, 8/14/70, 10/10/70 and 10/24/70, associated with ectoprocts (Rozsa).
7. *Doto coronata* (Gmelin 1791): Orient Point vicinity (Latham 1970).
8. *Facelina bostoniensis* (Couthouy 1838): East jetty at Moriches Inlet, 8/10/70, 8/14/70 and 10/10/70 (Rozsa).
9. *Onchidoris aspera* (Alder and Hancock 1842): East jetty at Moriches Inlet, 8/10/70 (Rozsa); Watch Hill, Fire Island, August 1971 on a skate egg case with hydroids and ectoprocts present (Rozsa).
10. *Onchidoris bilamellata* (Müller 1776): East jetty at Moriches Inlet, October 1970 (Rozsa); Gardiner's Island, 2/1/72, on *Laminaria agardhii* (Rozsa).
11. *Palio lessonii* (D'Orbigny 1837): Orient Point vicinity (Latham 1970).
12. *Polycerella davenportii* (Balch 1899): Cold Spring Harbor (Balch 1899).
13. *Tenellia fuscata* (Gould 1870): Cold Spring Harbor (Balch 1899); Watch Hill, Fire Island, August 1972, on red algae (Rozsa); Carman's River, 6/16/73, on algae (Rozsa).
14. *Tergipes tergipes* (Johnston 1835): Cold Spring Harbor (Balch 1899).

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AN UNUSUAL BIVALVE IN MARYLAND

Dorothy Raeihle

On our drive back from Florida last fall one of our side excursions was a brief visit December 1st to a beach at Kent Island, Maryland. Having crossed the Chesapeake Bay Bridge from Annapolis, we turned south at the first improved road going in that direction, and in a few miles found access to the shore by a fishing pier at Matapeake. There was a moderately wide beach of coarse, yellowish-brown sand -- a mixture of quartz and clay. The waters of Chesapeake Bay were calm. The tide was low, partially exposing a sand bar containing live Rangia cuneata (Gray, 1831); The pattern of the little mounds of damp sand at their breathing holes was very like that of the juvenile Spisula solidissima (Dillwyn, 1817) that we find burrowed into the sand at Rockaway.

The drift lines held many double valves of the Hooked Mussel, Brachidontes recurvus (Rafinesque, 1820), Macoma balthica (Linnaeus, 1758), mostly chalky white but a few specimens flushed with pink and one alive, and the soft-shell clam, Mya arenaria (Linnaeus, 1758), some alive. Surf clams and oysters, Spisula solidissima and Crassostrea virginica (Gmelin, 1792) were also represented. But the species that kept me on the beach until my feet were wet and I was too cold for comfort was a small, rather fragile, white bivalve which we considered to be a Tellina. It was in each line of drift but most of the best pairs were near the water. They were all dead and empty but some seemed quite fresh as they still had thin, glossy periostracum which glinted pinkish to iridescent. The largest valve collected was 21 mm long x 13 mm high at the umbones and we figure the thickness of a double-valved specimen of this size to be about 4 mm. One thing that was different about this tellin was that on a few of the specimens there was a thin line of brown periostracum edging the siphonal ends of the valves.

At home we spent hours trying to pin down the identification, puzzling over similarities, in text and drawings, to Tellina agilis Stimpson, 1857, T. iris Say, 1822, and even T. texana Dall, 1900. We finally had to ask for help, and sent most of the specimens to Dr. Kenneth Boss at the Museum of Comparative Zoology as a donation, as the immediate area was not listed for any of the tellins in his monograph -- nor was that thin line of brown periostracum.

In his note thanking us for the shells Dr. Boss identified our "tellin" as Macoma phenax Dall, 1900, remarking that it has a Gulf Coast relative, Macoma mitchelli Dall, 1895.*

Macoma phenax is not listed in the popular shell books but we found information to explain our confusion in JOHNSONIA 4(46):310 where Dr. Boss writes, "Macoma phenax Dall closely approaches the shape and smooth sculpture of (Tellina) agilis, but the former is distinguished by its lack of lateral dentition." Also, the definition given by Poirier (1954:173) shows that the species is well named: "Macoma phenax Dall (Greek, a cheat, an imposter; it bears a deceptive likeness to a Tellina.)"

Johnson (1934:52) lists Macoma phenax from only two stations, widely separated: Jerome Creek, Virginia and Tampa Bay, Florida. Porter

(1973 NCSC Bull. 7:47) records it from the Neuse River, North Carolina.

*(Macoma mitchelli Dall, 1895. Dall's description (NAUTILUS 9:33) reads in part, "... valves closely resembling Tellina versicolor Cozzens, but without the lateral teeth ... Habitat, Matagorda Bay, Texas." Johnson (1934:52) lists the range as South Carolina to Texas. Andrews (1971:191) reports that it is common in river influenced areas, Mississippi to Central Texas.)

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SAVE ENDANGERED SPECIES OF FRESHWATER MUSSELS

Several groups of sportsmen and environmentalists in Ohio have sent a plea to all interested people to have them support the Big Darby Creek Scenic River Proposal. This proposal would set aside the Upper Big Darby and all of the Little Darby as perpetual scenic river sites and close them to industrial or other types of exploitation forever. At least five species of mussels found in these waters are on the Department of Interior's list of endangered species. Their existence would be further endangered if these streams were to be dammed as has been proposed.

Please write to William B. Nye, Director, Ohio Department of Natural Resources, Fountain Square, Columbus, Ohio 43224, asking that the Big Darby and Little Darby be designated as Scenic Rivers.

FROM THE D'ATTILIOS: Rose and I can't begin to express our gratefulness for the many kindnesses showered upon us during our recent January visit to New York. I feel very honored that the members, in celebrating their 25th anniversary, should have been willing to make it financially possible for us to come from San Diego to attend that meeting. It was for a shell club surely an auspicious occasion and I was glad to meet so many friends who like me had been long-time members of the Club. The Club, I am glad to say, was well founded and its continued vitality is a sign that the future augurs well. Thanks again to all,

Tony and Rose

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